

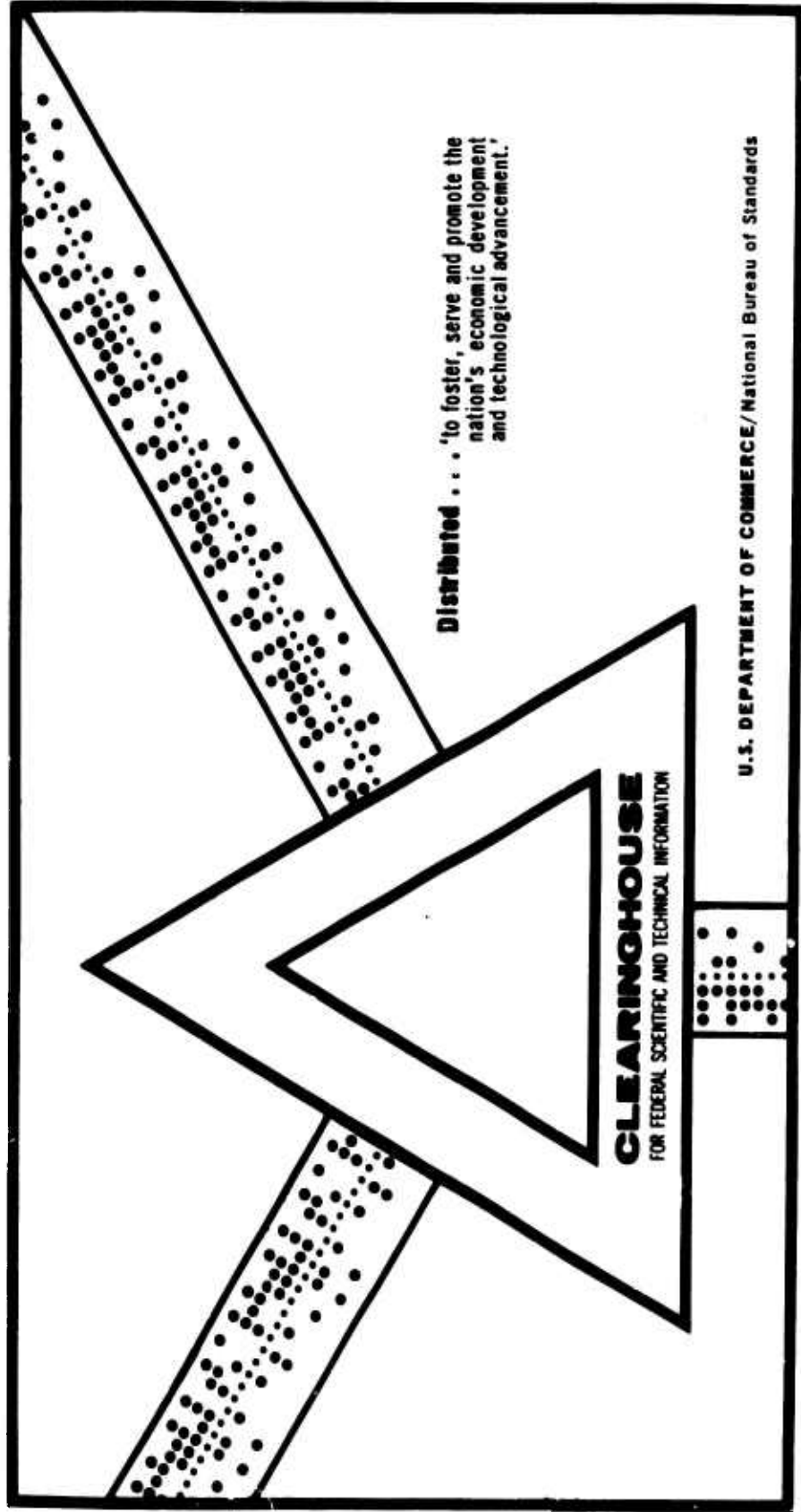
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**DETERMINATION OF PRINCIPAL PROPERTIES OF E FIBER-GLASS HIGH
TEMPERATURE EPOXY LAMINATES FOR AIRCRAFT**

S. J. Dastin, et al

Grumman Aerospace Corporation
Bethpage, New York

August 1969



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OF "E" FIBER-GLASS HIGH TEMPERATURE
EPOXY LAMINATES FOR AIRCRAFT**

Final Report



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DETERMINATION OF PRINCIPAL PROPERTIES
OF "E" FIBER-GLASS HIGH TEMPERATURE EPOXY LAMINATES FOR AIRCRAFT

FINAL REPORT

August 1969

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Grumman Aerospace Corporation

Materials Engineering Department

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PICATINNY ARSENAL
DOVER, NEW JERSEY 07801

Under Contract DAAA21-68-C-0404

Grumman Aerospace Corporation
Bethpage, New York 11741

FOREWORD

The work reported herein was performed under the sponsorship of Plastics Technical Evaluation Center - Picatinny Arsenal, Dover, New Jersey 07801 for the U.S. Army under contract DAAA21-68-C-0404. Mr. A. Slobodzinski, Picatinny Arsenal, is the U.S. Army Project Officer.

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ABSTRACT

A test program was conducted to develop mechanical strength data on ECDE 7581 glass fabric impregnated with F161 resin. This data is to be used in the new revision of MIL-HDBK-17. The properties determined were tensile, compressive and shear strengths and stiffnesses and Poisson's ratios over the temperature range of -65°F to 450°F. The results are presented in graphical, tabular, and summary forms.

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LIST OF SYMBOLS

$\dot{\sigma}_u$ - Ultimate stress in tension, compression, or flexure.

ϵ_u - Strain at ultimate stress in tension or compression.

E - Initial modulus of elasticity (Young's modulus) in tension or compression.

E' - Secondary modulus of elasticity in tension.

τ_{12} - Shear stress in the X-Y plane of the laminate.

τ_{13} - Shear stress in the X-Z plane of the laminate.

SECTION 1

INTRODUCTION

This document is submitted to the U.S. Army under contract DAAA21-68-C-0404 "Determination of Principal Properties of "E" Fiberglass - Epoxy Laminates For Aircraft".

The data contained herein was obtained on temperature resistant laminates, intended for continuous service up to 400°F (short time to 500°F), consisting of Fl61-505 epoxy-novolac resin reinforced with ECDE 7581 glass fabric (8 Harness satin using 75- 1/0 yarn), also designated 7781. Mechanical properties of these laminates were measured for the range from -65°F to 450°F in the dry state, and -65°F to 220°F in the wet state.

The developed data is intended for incorporation in revised MIL-HDBK-17, Plastics for Aerospace Vehicles.

SECTION 2

PHYSICAL PROPERTIES

2.1 PREPREG MATERIAL

The physical properties of the prepreg used in this program were subdivided into three groups, each group corresponded to a different resin content. The prepreg material was manufactured by HEXCEL - COAST MANUFACTURING DIVISION (formerly Coast Manufacturing and Supply). Two sets of physical property values for the uncured prepreg are listed for comparative purposes i.e., those furnished by the supplier and those measured by Grumman Aerospace Corporation. These values are summarized in Table 2-1.

TABLE 2-1 Physical Properties of Prepreg Material

GROUP NO.	I		II		III	
DATA SOURCE	HEXCEL	GRUMMAN	HEXCEL	GRUMMAN	HEXCEL	GRUMMAN
Average devolatilized Resin Content, %	26.78	26.25	33.15	33.18	36.57	36.63
Range of Resin Content, %	24.8-28.4	24.7-28.1	32.55-34.25	32.8-33.61	36.00-37.42	36.40-36.98
Average Volatiles, %	.69	.48	.55	.53	.55	.56
Range of Volatiles, %	.59-.81	.47-.49	.50-.57	.50-.56	.51-.57	.51-.60
Average Flow, %	2.7	1.5	7.9	6.2	12.9	10.1
Range of Flow, %	2.3-3.1	.6-2.7	7.3-9.0	5.6-7.4	12.2-14.0	9.3-11.3

NOTE: - Values from 4" squares, 4 ply laminates at 325°F and 15 psi for 8 minutes as per Society of Plastics Industry (SPI) Procedures PREPREG-1 and PREPREG-2.

- All values are weight percentages.

2.2 LAMINATES

The laminated panels used for mechanical testing, were constructed as shown in Reference 1, i.e., using parallel, alternately inverted, eight (8) and ten(10) ply layups - see Section 4.

2.2.1 RESIN CONTENT DERIVED FROM PER PLY THICKNESS

The average resin content of the laminates in each group was determined as follows:

- 1) The average per ply thickness of the laminates in each group was obtained and 2) these values were converted to average resin content using Figure 2-1, (the data used to generate this relationship were resin content tests on actual laminates by resin pyrolysis at $1050 \pm 50^{\circ}\text{F}$ in accordance with FTMS 406 Method 7061). The results are summarized below:

TABLE 2-2 Resin Contents from Per Ply Thickness Data for Laminated Elastic Panels

GROUP NUMBER	I	II	III
Average Resin Content*, %	26.0	31.0	35.6
Range Resin Content*, %	22.2-30.0	26.0 - 35.7	26.0 - 39.8
Average Per Ply Thickness, in.	.0080	.0090	.0101
Range Per Ply Thickness, in.	.0072-.0088	.0080-.0100	.0080-.0113

*NOTE: - All values are weight percentages

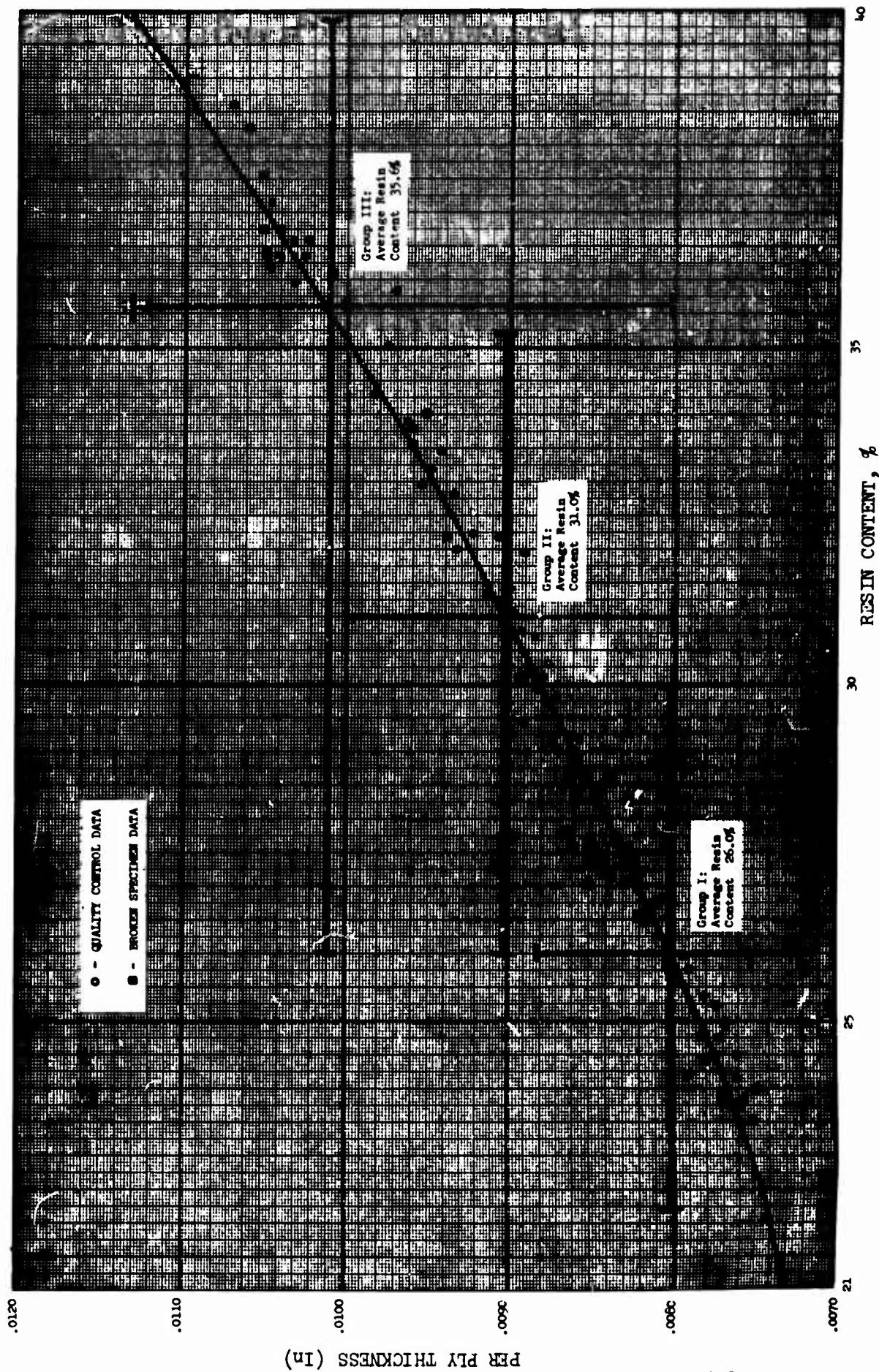


Figure 2-1. Gravimetric Resin Content versus Per Ply Thickness for F161/7581 Fiberglass Epoxy

2.2.2 RESIN CONTENT DERIVED FROM SPECIFIC GRAVITY

To obtain additional information, the average resin content of the laminated plastic panels in each group was obtained in another manner as follows:

1) The average specific gravity for each group was obtained (on actual laminates by water displacement, FTMS 406 Method 5011) and 2) these values were converted to average resin content using Figure 2-2. The relationships of Figure 2-2 were established by relating specific gravity to actual resin contents by pyrolysis (FTMS 406, Method 7061). These values are listed in Table 2-3 below:

TABLE 2-3 Resin Contents from Specific Gravity Data for Laminated Panels

GROUP NUMBER	I	II	III
Average Resin Content, %	25.9	31.6	35.8
Range of Resin Content, %	22.6 - 28.5	29.7 - 32.5	32.5 - 38.0
Average Specific Gravity	2.01	1.92	1.86
Range of Specific Gravity	1.97-2.06	1.89-1.95	1.82-1.91

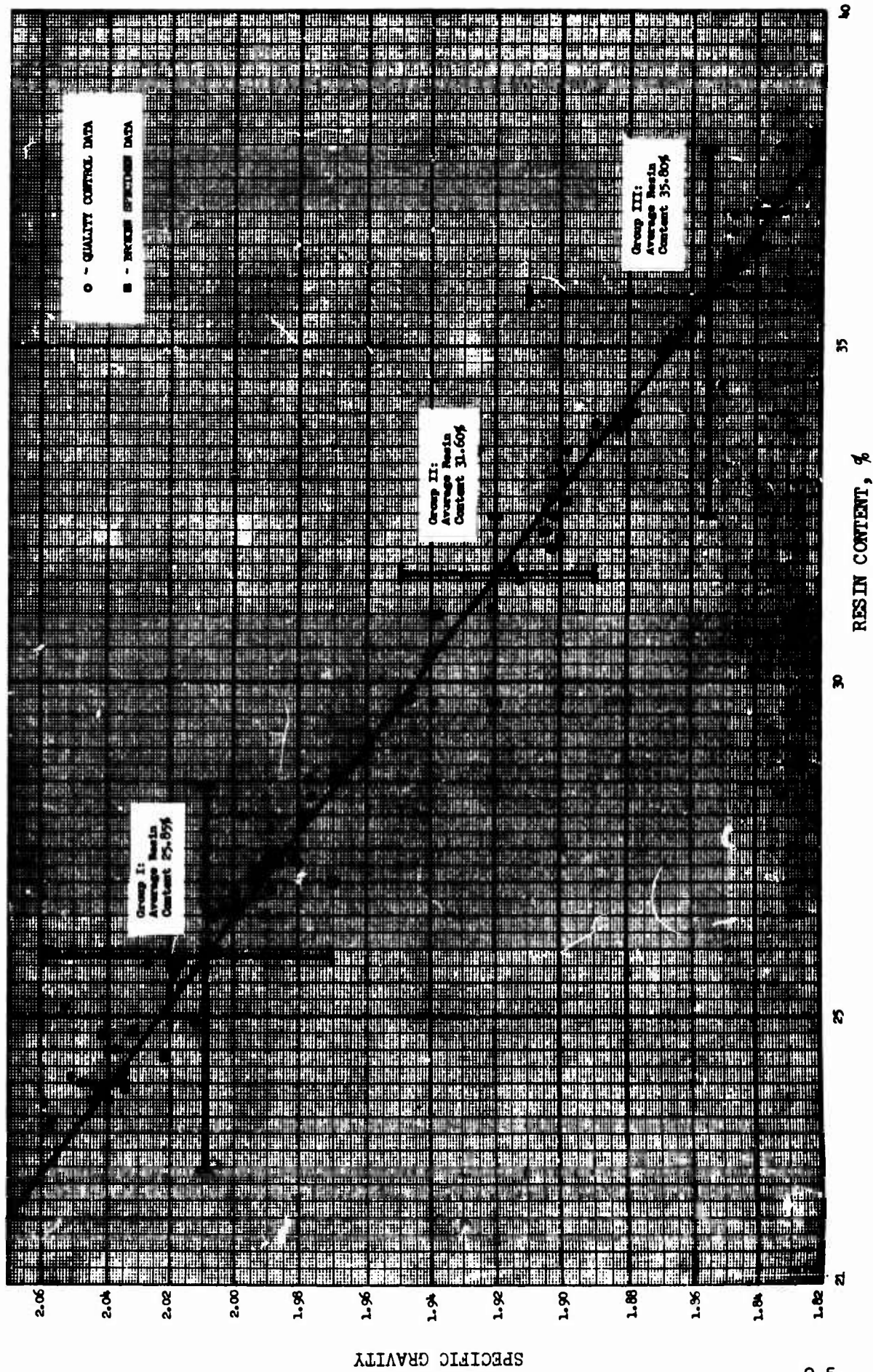


Figure 2-2. Gravimetric Resin Content versus Specific Gravity for F161/7581 Fiberglass Epoxy

2.2.3 VOID CONTENT

To determine void content of the laminated panels, theoretical curves of voids versus specific gravity and resin content are presented in Figure 2.3. These curves were generated as follows:

At resin contents of 26.5%, 33.75% and 36.5% (which correspond to dense data points on Figure 2.2), and assuming 7 void contents of 0 to 6 percent, the relationship between laminate resin content and specific gravity was established in accordance with the relationships specified in ASTM D-2734. These theoretical curves assumed a 7581 glass reinforcement specific gravity of 2.56. The specific gravity of the resin was obtained by taking several 1/8 inch thick, 1 inch square pure resin castings, exposing them to the same cure cycle as that of the laminates, and measuring the specific gravity by water displacement (FTMS 406 Method 5011). The specific gravity was found to be 1.260 average, with a range of 1.259 to 1.263.

To verify the accuracy of these curves, the methods specified in MIL-P-17549C (SHIPS) were used to find the void content, using measured values of resin content and specific gravity. The results are:

<u>RESIN CONTENT (%)</u>	<u>SPECIFIC GRAVITY</u>	<u>VOID CONTENT (%)</u>
26.50	2.00	0.4%
33.75	1.887	0.6%
36.50	1.884	0.9%

The dotted curve shown in Figure 2.3, is the plot of the actual specific gravity of the fabricated laminates used in obtaining data presented herein. All had measured void contents less than 1% by volume, which verifies the 0 and 1% void curves. Higher void content curves could not be verified under this program.

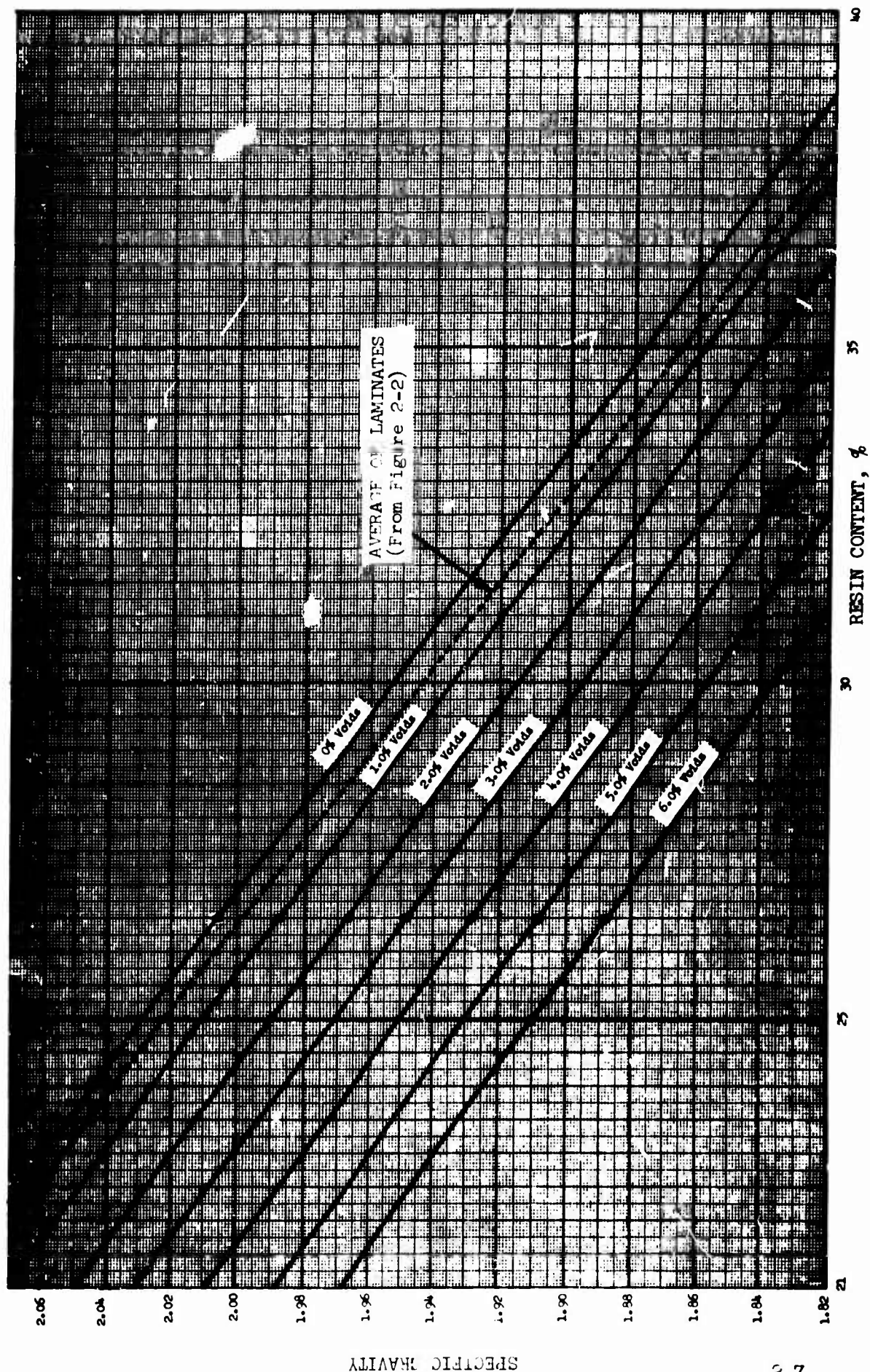


Figure 2-3. Gravimetric Resin Content versus Specific Gravity for F161/7581 Fiberglass Epoxy of Various Theoretical Void Contents.

SECTION 3

MECHANICAL PROPERTIES

3.1 GENERAL INFORMATION

The data reported in this section were generated from specially selected specimen shapes, considering the following:

TENSION SPECIMEN - An elongated, $11\frac{1}{2}$ inch long, bow-tie tensile specimen was selected for use in this program (see Figure 3-1). It provided realistic data indicated by terminal failures in the test gage section with minimum scatter. In addition, this specimen was easily fabricated and provided reproducible data. Other tensile specimen configurations which were evaluated for possible use in this program were tab ended $\frac{1}{2}$ inch wide straight sided specimens, other elongated bow-tie specimen, and ASTM D638 Type I specimens of 3, 8, and 18 inch neck down radii (see Reference 2).

COMPRESSION SPECIMEN - The standard ASTM D695 method is generally employed when compressive strength of laminated plastics is desired. This test requires the use of a short, straight sided specimen. Typical failure modes included crushed fibers, delaminations and brooming (failure of the ends of the specimen in contact with the pressure plates). A specimen configuration that avoided these failures and enabled shear plane type fracture was selected (see Figure 3-2). The specimen and fixture provided a central unsupported area of slenderness ratio of 6.5:1 (0.1 thickness) to 8.1:1 (0.08 thickness).

PICTURE FRAME SHEAR SPECIMEN - A series of tests to evaluate the suitability of using the picture frame shear test specimen to generate data on fiberglass laminates was conducted. The specimen configuration shown in Figure 3-3 was found adequate for this program.

POISSON'S RATIO SPECIMEN - By relating test data developed in compression and tensile testing a straight-sided tensile specimen was selected. An extensometer was centrally located to measure longitudinal extensions, and strain gages were centrally loaded to measure lateral contraction (See Figure 3-4).

The specimen configurations described above were used with the following test methods:

TENSION TEST METHOD - Testing was performed with grips which were self-aligning, both transversely and axially (modified Templin grips). The speed of testing (head travel) was held constant at 0.050 inch per minute. The specimen was aligned such that its longitudinal axis was parallel to the direction of load application.

COMPRESSION TEST METHOD - A jig which completely stabilized the ends of the specimen was used. The jig surfaces which contacted the specimen were Teflon faced and the ends of the specimen were clamped (sliding fit). This fixture provided an unsupported free space of 3/16 inch. Figure 3-5 shows the jig with the test specimen inserted. Compressometers were installed at the sides of the specimen. The test was conducted to fracture at a speed of 0.050 inch per minute.

PICTURE FRAME SHEAR TEST METHOD - The specimen was loaded at alternate corners in tension at a loading head rate of 0.050 inch per minute, with compressometers positioned to measure the lateral contraction as shown in Figure 3-3.

POISSON'S RATIO TEST METHOD - Standard Templin grips were used to induce a tensile stress. Values were reported at several strains. The loading rate to a given strain was 0.05 inch per minute.

Test temperature, condition, and number of specimens is given in Table 3-1. The wet condition indicates exposure to $95 \pm 5\%$ relative humidity for 42 days at a temperature of 125°F. In addition, for wet

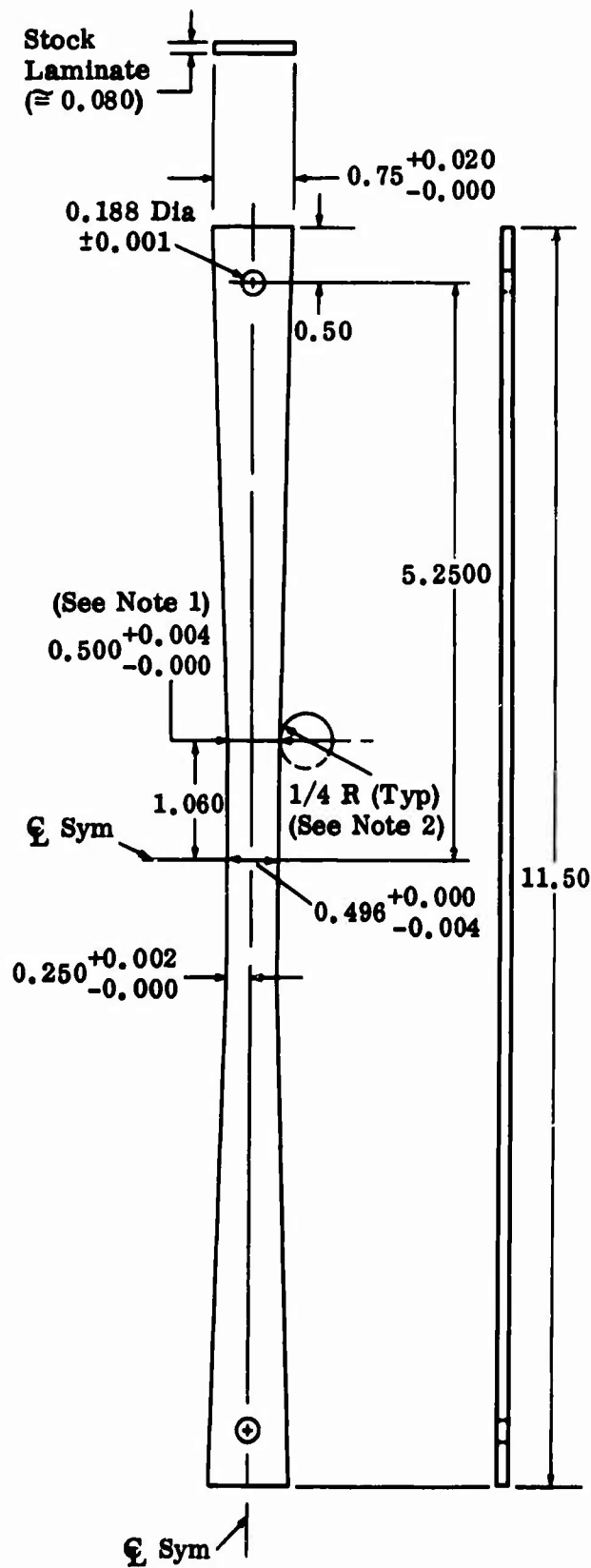
tests at 25°F and -65°F the samples were cycled four times between 25°F and 125°F (wet) with $\frac{1}{2}$ hour exposure at each temperature condition. The dry condition indicates that the specimens were exposed to 50 ± 5% relative humidity at 70-75°F for 14 days. The elevated temperature condition (400°F and 450°F) indicates that the specimens were exposed to 400°F and 450°F respectively for 100 hours prior to test at these elevated temperatures. All data pertaining to each test condition are recorded on the top of the appropriate table in the appendices.

TABLE 3-1 Regrouped Test Schedule and Test Environment

GRAVIMETRIC RESIN CONTENT, %	NUMBER OF TESTS FOR EACH PROPERTY					
	26		31		36	
CONDITION	WET	DRY	WET	DRY	WET	DRY
TEMPERATURE °F						
450* (1), (2)	-	5	-	-	-	5
400 (1), (2)	-	10	-	20	-	10
220 (1), (2)	5	-	-	-	5	-
160 (2)	10	-	20	-	10	-
75 (RT)	10	-	20	-	10	-
25 (2)	5	-	10	-	5	-
-65 (2)	10	20	20	10	10	10

* This temperature is 50°F in excess of the maximum temperature recommended for continuous use of this material (400°F). This test was performed to obtain additional data.

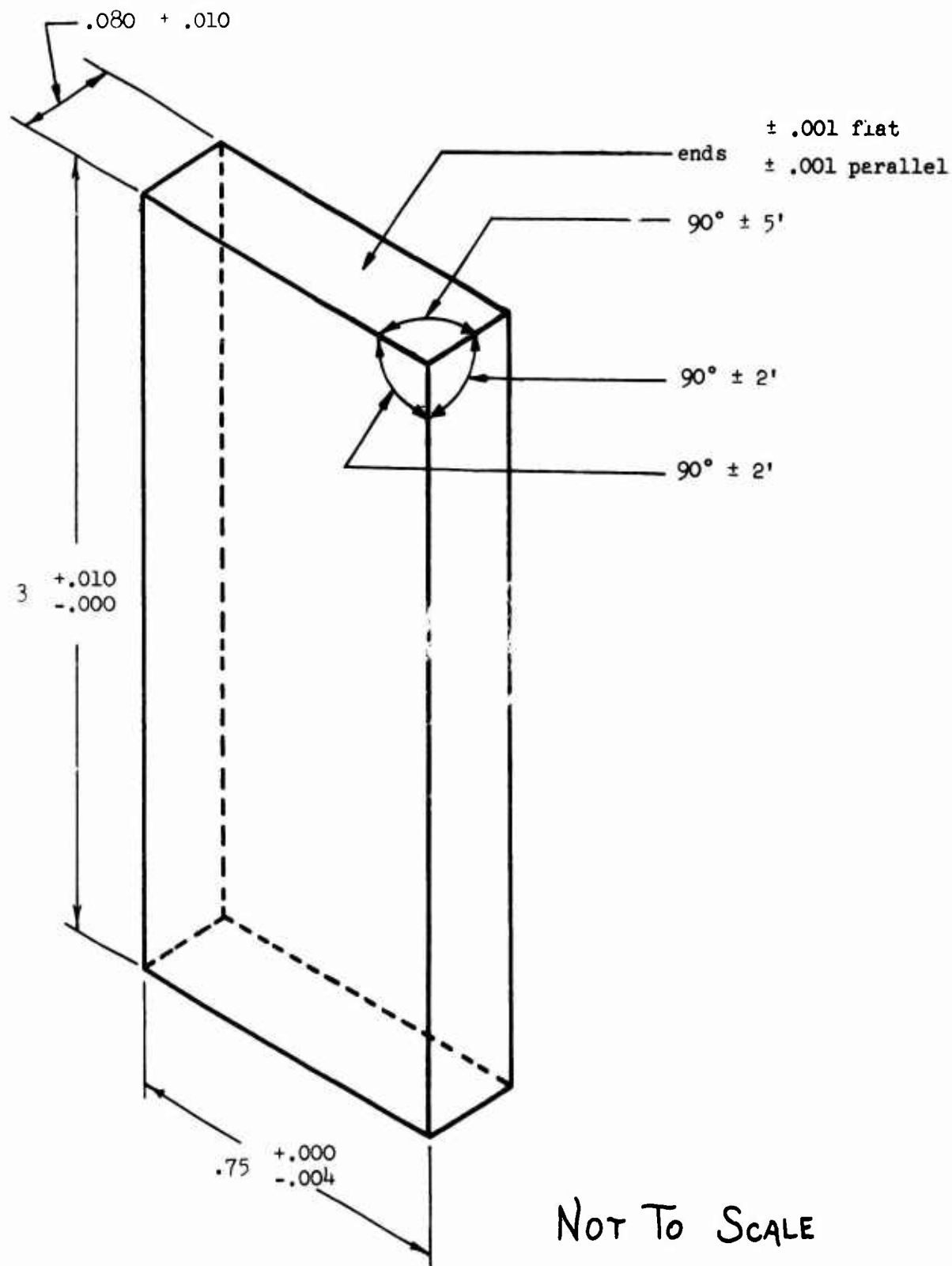
- (1) Picture-frame shear tests were not performed at these temperatures.
- (2) Poisson's ratios were not determined at these temperatures.



Notes:

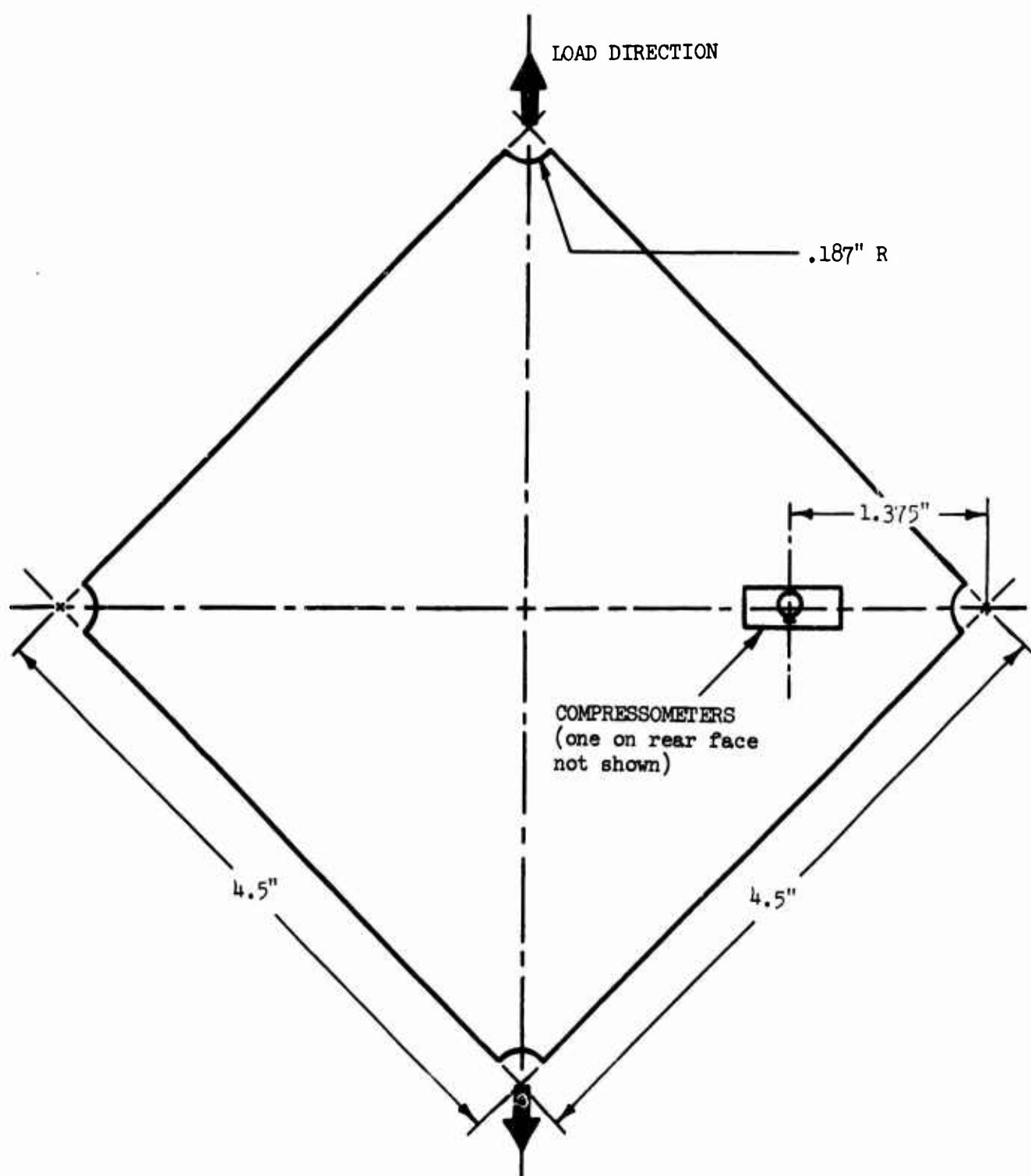
1. The width outward from 0.496 shall be increased gradually and equally on each side up to 0.500 so that no abrupt changes in dimensions result.
2. Transition from straight-sided center section to tapered section shall be smoothly joined in the area of the 1/4 rad.
3. All dimensions in inches

Figure 3-1. Selected Tensile Specimen



Note: All Dimensions In Inches

Figure 3-2. Selected Compression Specimen



NOTE: ONLY EXPOSED AREA INSIDE FRAME IS SHOWN.
 FOR COMPLETE SPECIMEN
 DESCRIPTION SEE
 REFERENCE 1.

Figure 3-3 Schematic of Picture Frame Shear Specimen
 Showing Location of Compressometers

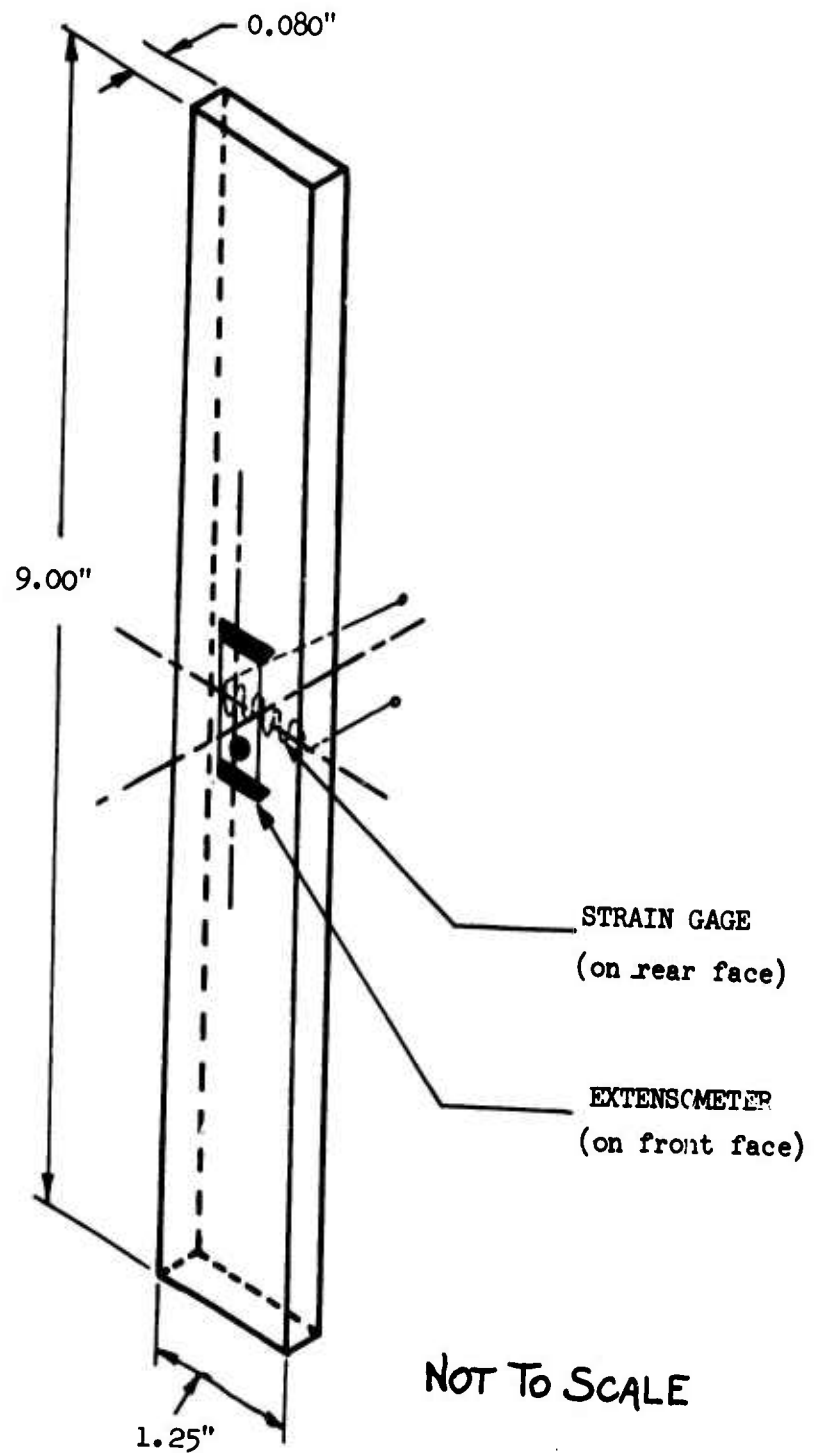


Figure 3-4. Specimen Selected to Determine Poisson's Ratio

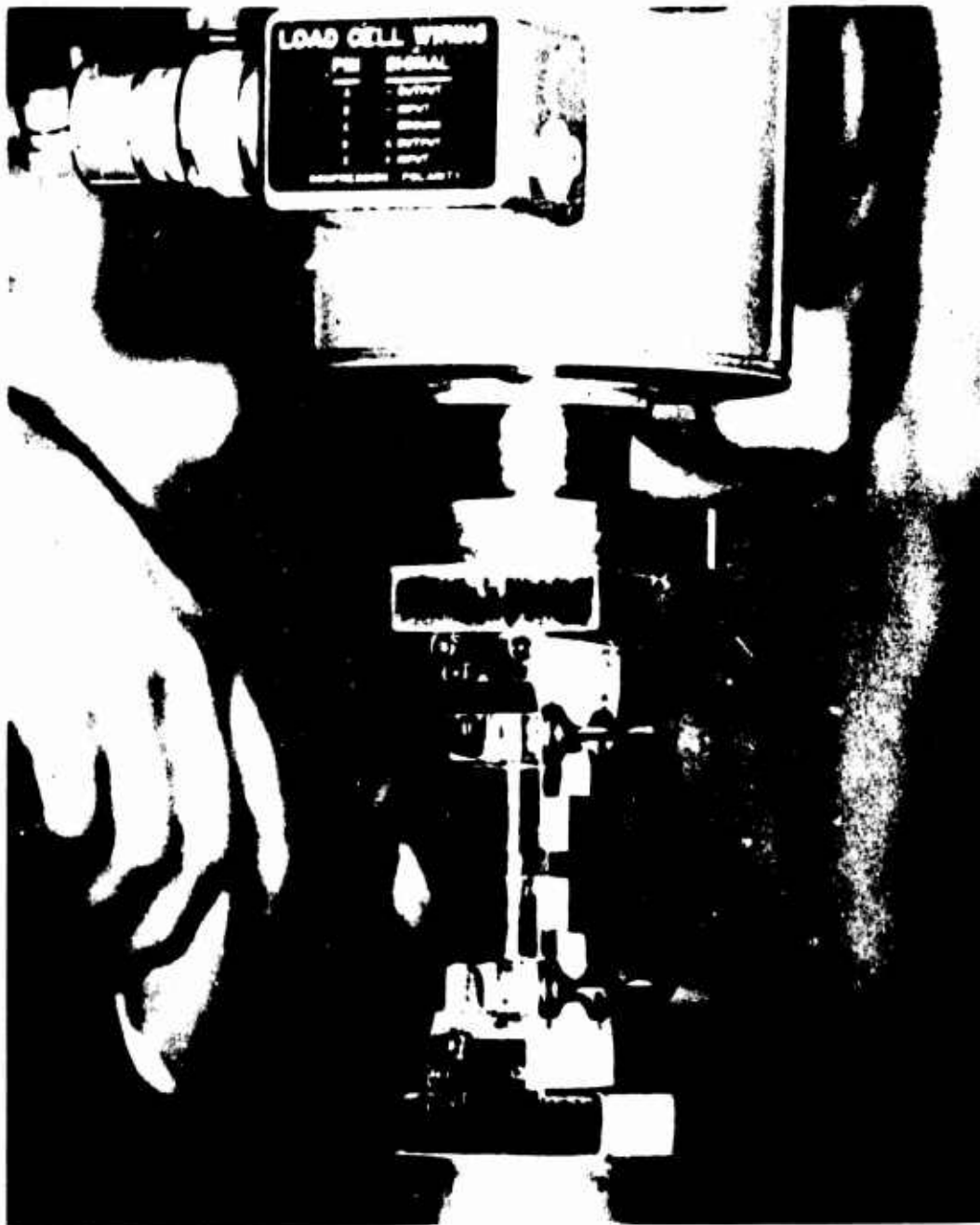


Figure 3-5. Compression Test Jig with Test Specimen Inserted

3.2 GROUP I (26.0% Resin Content) Laminates

The specific data in tabular form for laminates of this resin content are reported in Appendix I in the following manner:

Tension - Tables AI-1 to AI-18

Compression - Tables AI-19 to AI-36

Picture Frame Shear - Tables AI-37 to AI-40

Poisson's Ratio - Tables AI-41 to AI-43

3.2.1 SUMMARY DATA

Table 3-2 summarizes the primary mechanical properties of 26% average resin content laminates. All values, except flexural strength and interlaminar shear, are from either Appendix I data or from the graphs of para. 3.3.2 (on laminates of 0.08 inch nominal thickness). The flexural strength data are from Quality Control Testing (see para. 3.5) of .125 inch nominal thickness laminates and the interlaminar shear values are from separately molded 0.250 inch thick panels tested by short span bending in accordance with ASTM D 2344.

3.2.2 GRAPHICAL DATA

Figures, 4.5.1, 4.5.2, 4.5.3, and 4.5.4 (to be in revised MIL-HDBK-17) are graphical representations of the data given in Table 3-2 and Appendix I. Note that the arrowheads of the stress-strain curve of average minus 3 times the standard deviation (AVG. -3 S.D.) indicate the highest strain level for which stress readings for all specimens in the sample were recorded.

TABLE 3-2 SUMMARY OF MECHANICAL PROPERTIES - GROUP I LAMINATES

THICKNESS		PLIES: 8 AND 10				INCHES: .0080 (AVERAGE-PER PLY)														
FABRICATION		LAY UP: BALANCED, PARALLEL		VACUUM: NONE		PRESSURE: 60 ± 5 PSI		BLEEDOUT: VERT. & STEPPED EDGE		CURE: 1 HR @ 350F		POSTCURE: 2 HR @ 300F & 2.5 HR @ 400F								
PHYSICAL PROPERTIES		WEIGHT PERCENT RESIN: 26.0 (AVERAGE)		SPECIFIC GRAVITY: 2.01 (AVERAGE)		PERCENT VOIDS (BY VOLUME): 0.4 (APPROX)		BARCOL HARDNESS: 75 (AVERAGE)												
TEMPERATURE CONDITION		-65F		25F		RT		160F		220F		400F		450F						
		DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET					
TENSION: σ_u , KSI ϵ_u , % $E \times 10^6$ PSI $E' \times 10^6$ PSI	0°	92.4	5.16	80.5	10.87	69.5	-	61.4	3.20	65.7	3.03	50.7	5.72	51.3	-	59.8	3.81	47.5	-	
	90°	67.8	10.65	62.3	5.01	57.4	-	50.3	2.61	53.6	5.19	46.2	2.69	38.8	-	36.2	5.16	27.3	-	
	0°	2.86	.211	2.37	.311	2.02	-	1.78	.133	1.97	.144	1.58	.191	1.49	-	1.96	.075	1.59	-	
	90°	2.42	.314	1.97	.244	1.85	-	1.65	.075	1.88	.123	1.55	.101	1.30	-	1.38	.133	1.19	-	
	0°	4.42	-	4.49	-	4.28	-	4.10	-	3.92	-	3.72	-	3.53	-	3.27	-	3.12	-	
	90°	4.22	-	4.21	-	4.08	-	3.76	-	3.17	-	3.38	-	3.08	-	2.86	-	2.56	-	
	0°	3.32	-	3.14	-	3.11	-	3.06	-	3.24	-	3.07	-	3.14	-	2.94	-	2.80	-	
	90°	2.70	-	2.74	-	2.65	-	2.62	-	2.72	-	2.55	-	2.65	-	2.46	-	2.22	-	
	0°	73.2	6.83	74.0	5.02	52.9	-	57.3	4.0	48.9	3.50	44.7	3.25	40.5	-	28.8	3.03	14.7	-	
	90°	64.2	3.19	55.8	4.40	43.7	-	47.5	2.28	42.0	2.64	40.1	1.90	23.6	-	18.9	0.89	11.9	-	
COMPRESSION: σ_u , KSI ϵ_u , % σ_v , KSI $E \times 10^6$ PSI	0°	1.70	.419	1.65	.277	1.16	-	1.08	.170	1.12	.153	0.84	.143	1.19	-	.76	.031	.34	-	
	90°	1.40	.138	1.42	.273	0.97	-	1.26	.413	1.14	.231	1.22	.177	0.98	-	.71	.272	.42	-	
	0°	39	-	46	-	22	-	42	-	41	-	24	-	29	-	15	-	-	-	
	90°	28	-	41	-	17	-	24	-	36	-	21	-	18	-	11	-	-	-	
	0°	4.42	-	4.47	-	4.33	-	4.27	-	4.05	-	3.94	-	3.60	-	3.73	-	3.89	-	
	90°	4.02	-	4.19	-	4.31	-	4.12	-	3.68	-	3.40	-	3.46	-	3.07	-	2.88	-	
	0°/90°	20.1	2.3	-	-	-	-	16.0	1.64	13.4	1.28	-	-	-	-	-	-	-	-	
	TEMP CONDITION		75F		DRY		75F		DRY		75F		DRY		75F		DRY		75F	
			AVG		MAX		MIN		AVG		MAX		MIN		AVG		MAX		MIN	
	FLEXURE σ_u , KSI		94.10		96.86		89.64		94.10		96.86		89.64		94.10		96.86		89.64	
INTERLAMINAR SHEAR: 13° KSI		5.56		5.65		5.50		5.56		5.65		5.50		5.56		5.65		5.50		

TEST METHODS:
TENSION MIL-HDBK-17
COMPRESSION MIL-HDBK-17
INTERLAMINAR SHEAR ASTM D2346

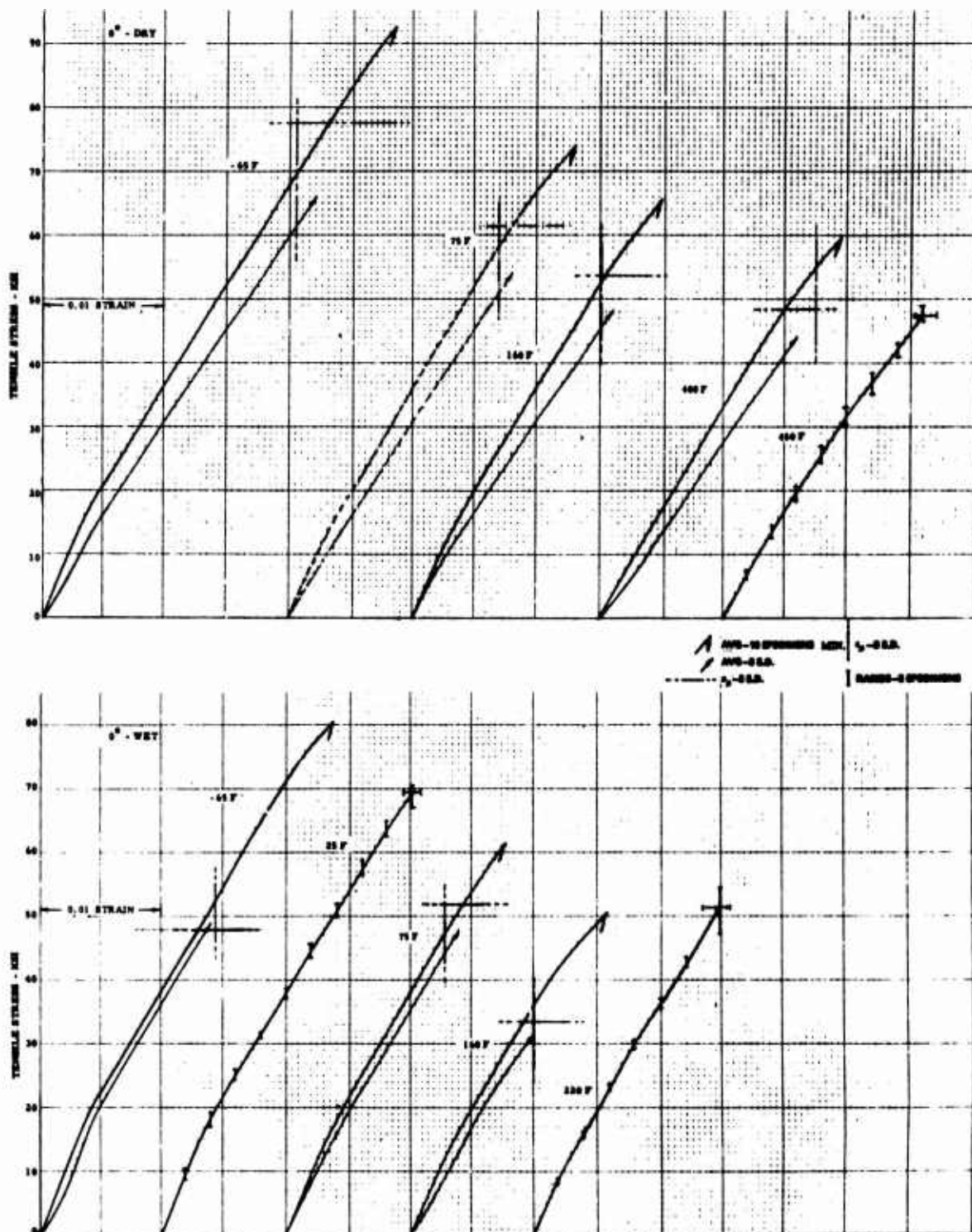


FIGURE 4.5.1 (a) TENSILE STRESS-STRAIN FOR F161/7981 FIBERGLASS EPOXY LOADED IN 0° DIRECTION (26% RESIN)

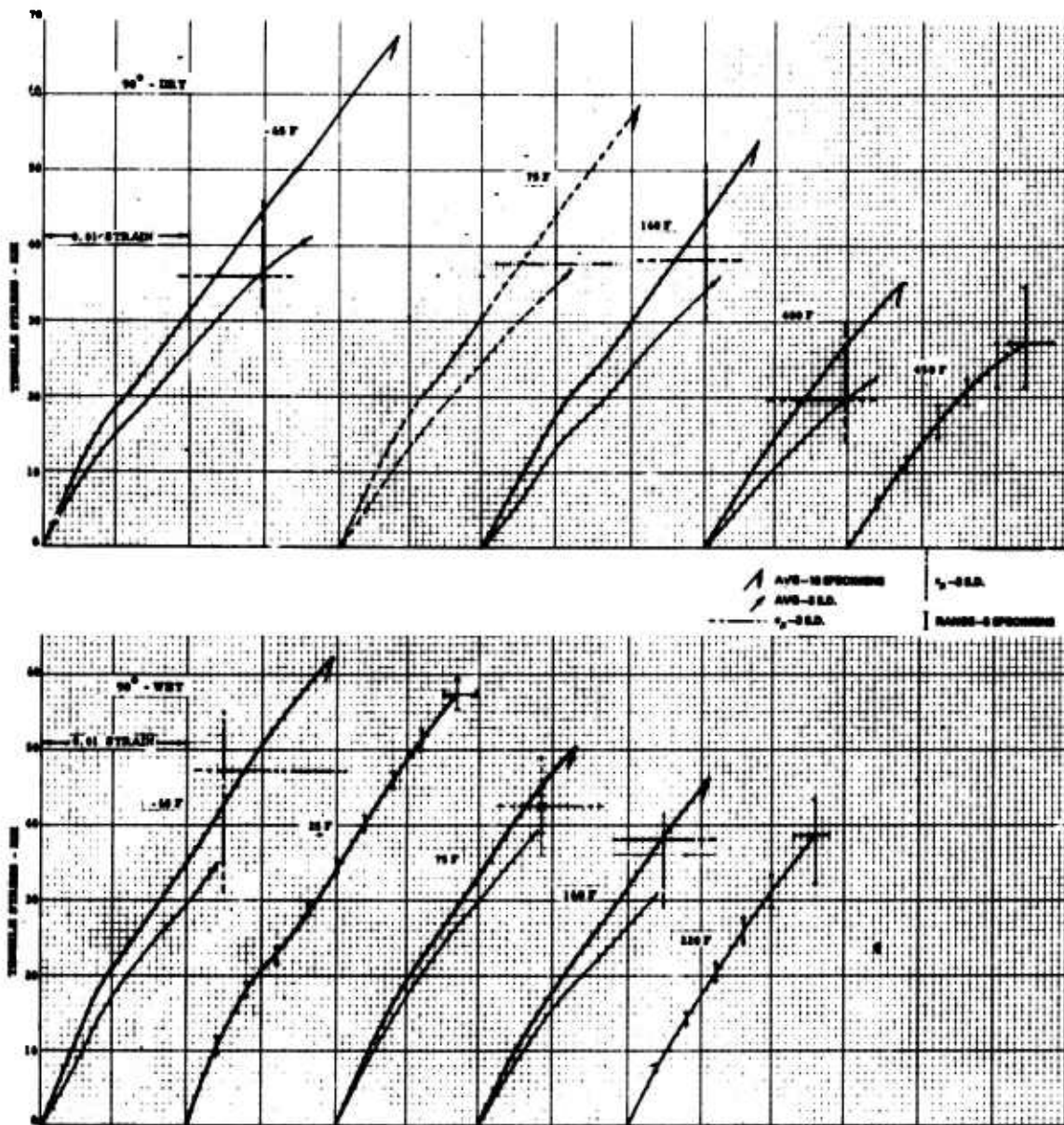


FIGURE 4.5.1 (b) TENSILE STRESS-STRAIN FOR F161/7161 FIBERGLASS EPOXY LOADED IN 90° DIRECTION (545 RESEN)

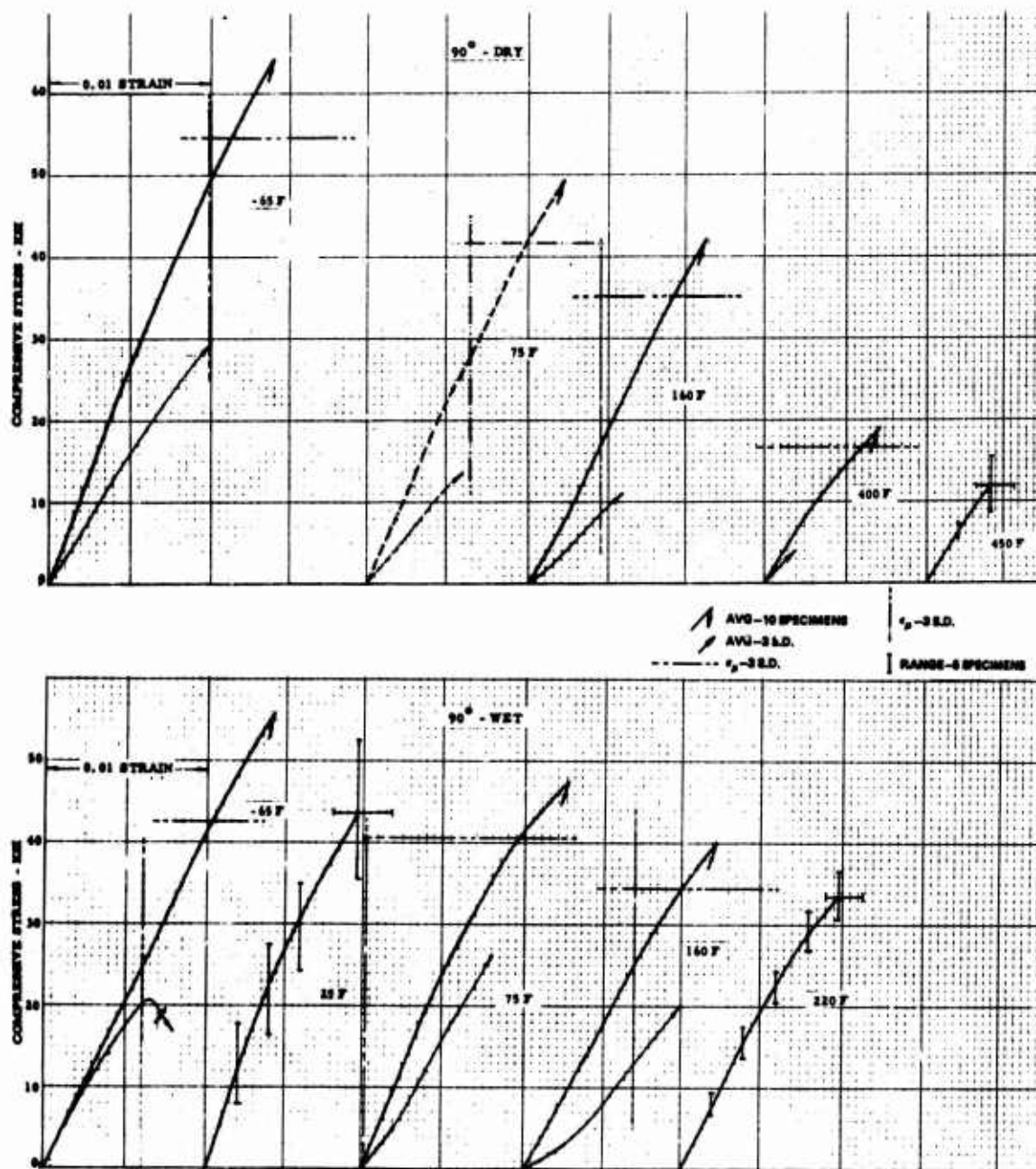


FIGURE 4.5.2(b) COMPRESSIVE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 90° DIRECTION (26% RESIN)

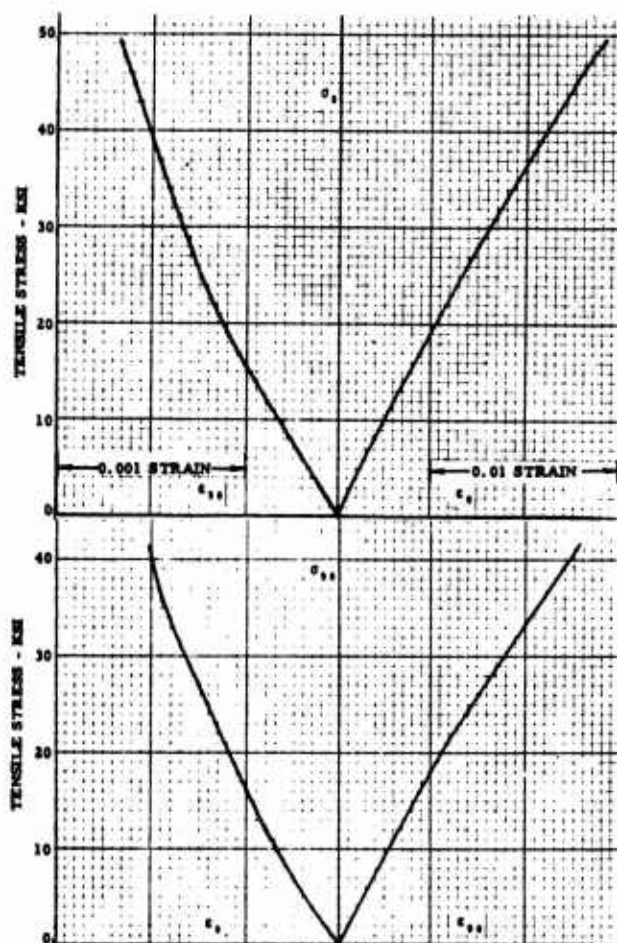


FIGURE 4.5.4 POISSON EFFECTS FOR F161/7581 FIBERGLASS EPOXY (26% RESIN)

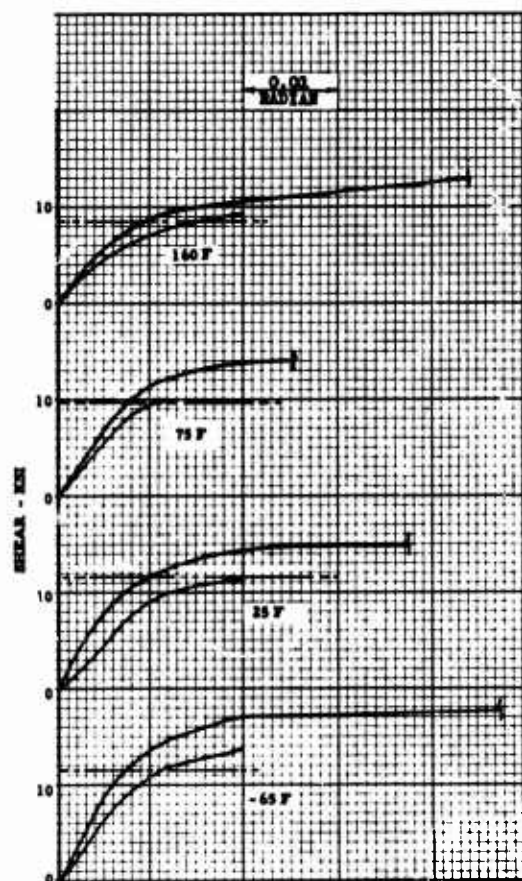


FIGURE 4.5.3 0°-90° PICTURE FRAME SHEAR FOR F161/7581 FIBERGLASS EPOXY (26% RESIN)

3.3 GROUP II (31.0% Resin Content) Laminates

The specific data in tabular form for laminates of this resin contents are reported in Appendix II in the following manner:

Tension - Tables AII-1 to AII-14

Compression - Tables AII-15 to AII-28

Picture Frame Shear - Tables AII-29 to AII-34

Poisson's Ratio - Tables AII-35 to AII-38

3.3.1 SUMMARY DATA

Table 3-3 summarizes the primary mechanical properties of 31% average resin content laminates. All values, except flexural strength, are from either Appendix II data or the graph of para. 3.3.2. (on laminates of 0.08 inch nominal thickness). The flexural strength data is from Quality Control Testing (see para. 3.5) of .125 inch nominal thickness laminates.

3.3.2 GRAPHICAL DATA

Figure numbers 4.6.1, 4.6.2, 4.6.3, and 4.6.4 (to be in revised MIL-HDBK-17) are graphical representations of the data given in Table 3-3 and Appendix II. Note that the arrow-heads of the stress-strain curve of average minus 3 times the standard deviation (AVG. -3 S.D.) indicate the highest strain level for which stress readings for all specimens in the sample were recorded.

TABLE 3-3 SUMMARY OF MECHANICAL PROPERTIES - GROUP II LAMINATES

THICKNESS		PLIES:			8 AND 10			INCHES:			.0080 (AVERAGE PER PLY)											
FABRICATION		LAY UP:		VACUUM:		PRESSURE:		BLEEDOUT:		CURE:		POSTCURE:										
		BALANCED, PARALLEL		NONE		60 + 5 PSI		VERT. & STEPPED EDGE		1 HR @ 350F		2 HR @ 300F & 2.5 HR @ 400F										
PHYSICAL PROPERTIES		WEIGHT PERCENT RESIN:			SPECIFIC GRAVITY:			PERCENT VOIDS (BY VOLUME):			BARCOL HARDNESS:											
		31.0 (AVERAGE)			1.92 (AVERAGE)			0.6 (APPROX)			75 (AVERAGE)											
TEMPERATURE CONDITION		-65F			25F			RT			160F			220F			400F			450F		
		WET			WET			WET			WET			WET			WET			WET		
		AVG	SD	AVG	AVG	SD	AVG	AVG	SD	AVG	AVG	SD	AVG	AVG	SD	AVG	AVG	SD	AVG	SD		
TENSION: σ_u , KSI	0°	86.2	4.68	82.3	4.97	3.87	66.4	64.0	2.04	60.1	3.75	51.4	4.23	—	—	—	47.3	4.87	—	—		
	90°	70.0	5.24	67.9	2.98	3.45	56.3	53.5	2.91	49.3	0.95	39.8	3.50	—	—	—	31.0	1.95	—	—		
	0°	2.93	.139	2.53	.182	2.14	.122	2.10	.064	2.02	.102	1.66	.170	—	—	—	1.66	.181	—	—		
	90°	2.50	.210	2.41	.224	2.09	.102	1.90	.105	1.86	.056	1.47	.092	—	—	—	1.25	.085	—	—		
	0°	4.22	—	4.30	—	4.12	—	3.84	—	3.69	—	3.65	—	—	—	—	3.09	—	—	—		
COMPRESSION:	0°	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—		
	90°	59.4	3.17	57.5	11.56	45.4	5.09	47.3	4.73	42.2	3.34	38.7	4.19	—	—	—	25.8	8.27	—	—		
	0°	1.86	.208	1.72	.324	1.38	.623	1.33	.279	1.52	.044	1.04	.229	—	—	—	0.95	.236	—	—		
	90°	1.61	.285	1.44	.362	1.19	.194	1.10	.213	1.30	.250	0.99	.221	—	—	—	0.87	.278	—	—		
	0°	44	—	38	—	30	—	33	—	32	—	25	—	—	—	—	16	—	—	—		
SHEAR: τ_{12} , KSI	0°/90°	33	—	33	—	30	—	30	—	—	—	21	—	—	—	—	15	—	—	—		
	90°	3.90	—	4.04	—	4.21	—	4.03	—	3.42	—	4.08	—	—	—	—	3.90	—	—	—		
	90°	3.56	—	3.84	—	4.03	—	3.96	—	3.23	—	4.01	—	—	—	—	3.07	—	—	—		
TEMP. CONDITION		75F			DRY																	
		AVG	MAX	MIN	AVG	MAX	MIN															
FLEXURE: σ_u , KSI	0°	90.23	93.74	87.28																		

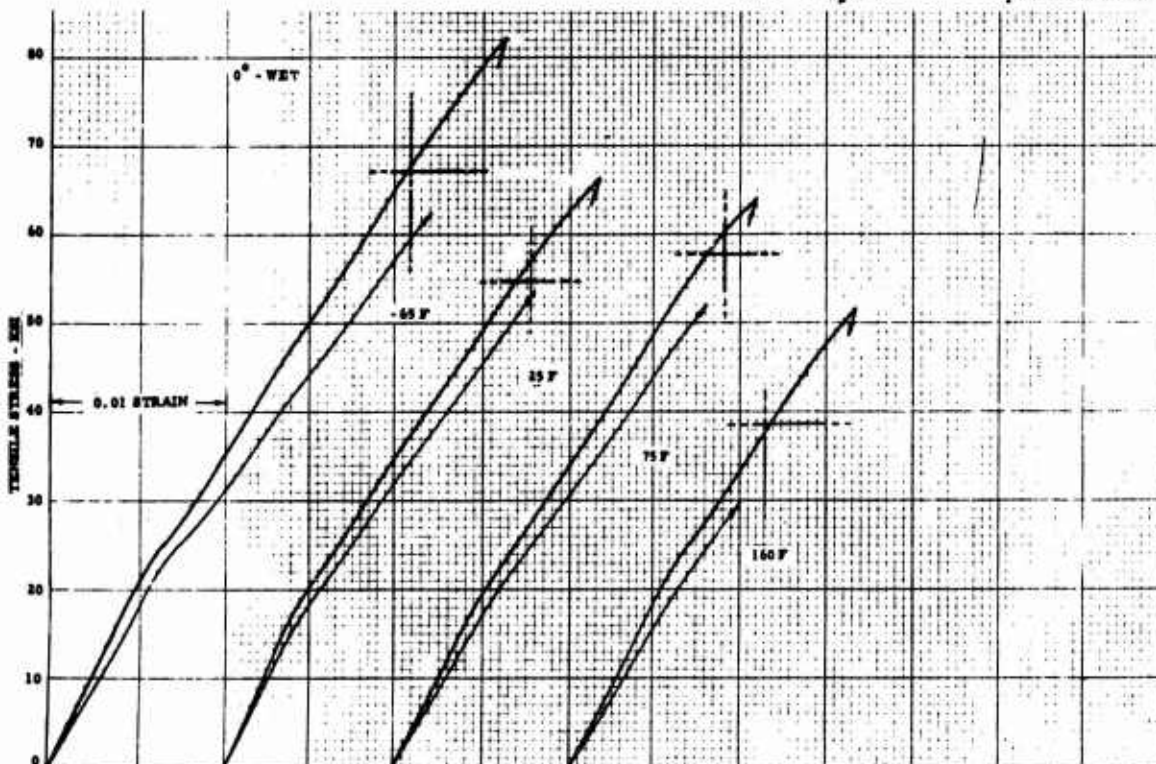
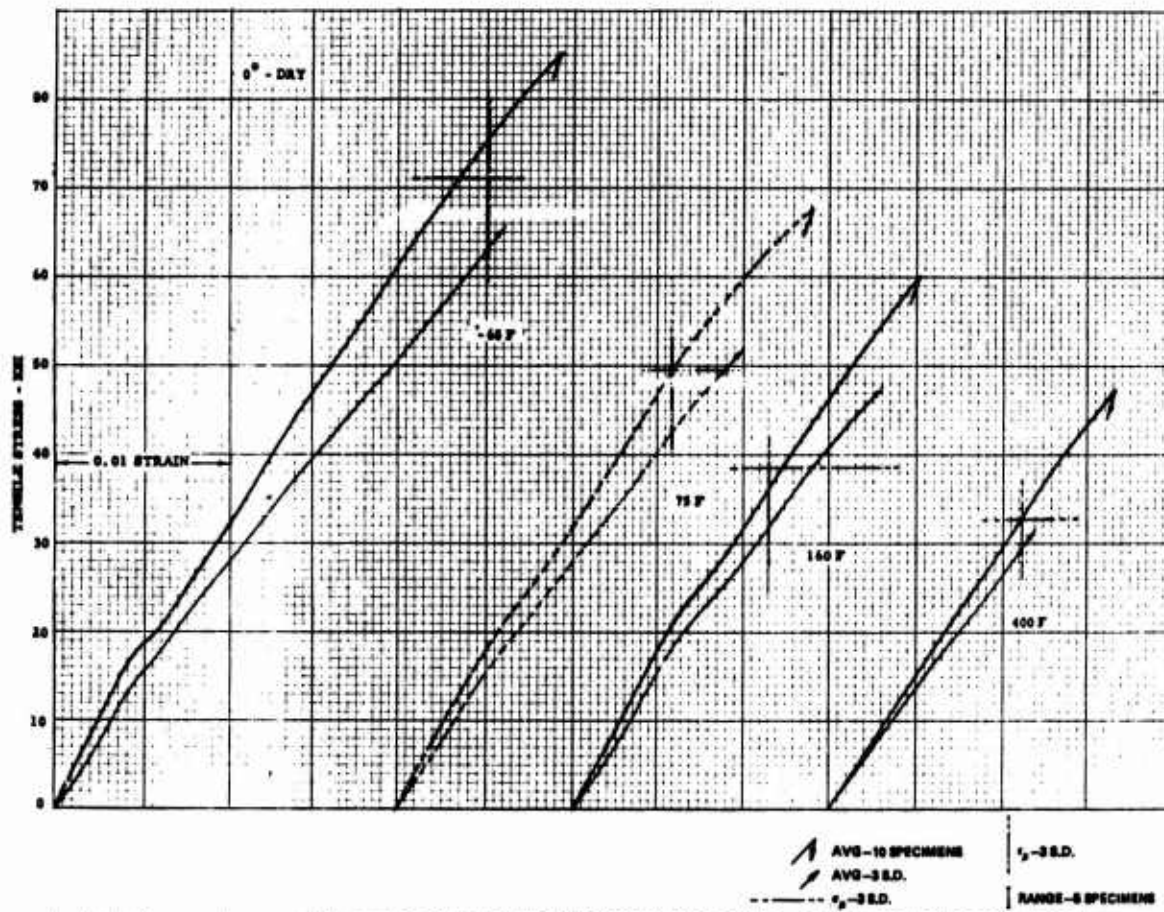


FIGURE 4.6.1(a) TENSILE STRESS-STRAIN FOR F161/7561 FIBERGLASS EPOXY LOADED IN 0° DIRECTION (313 RESIN)

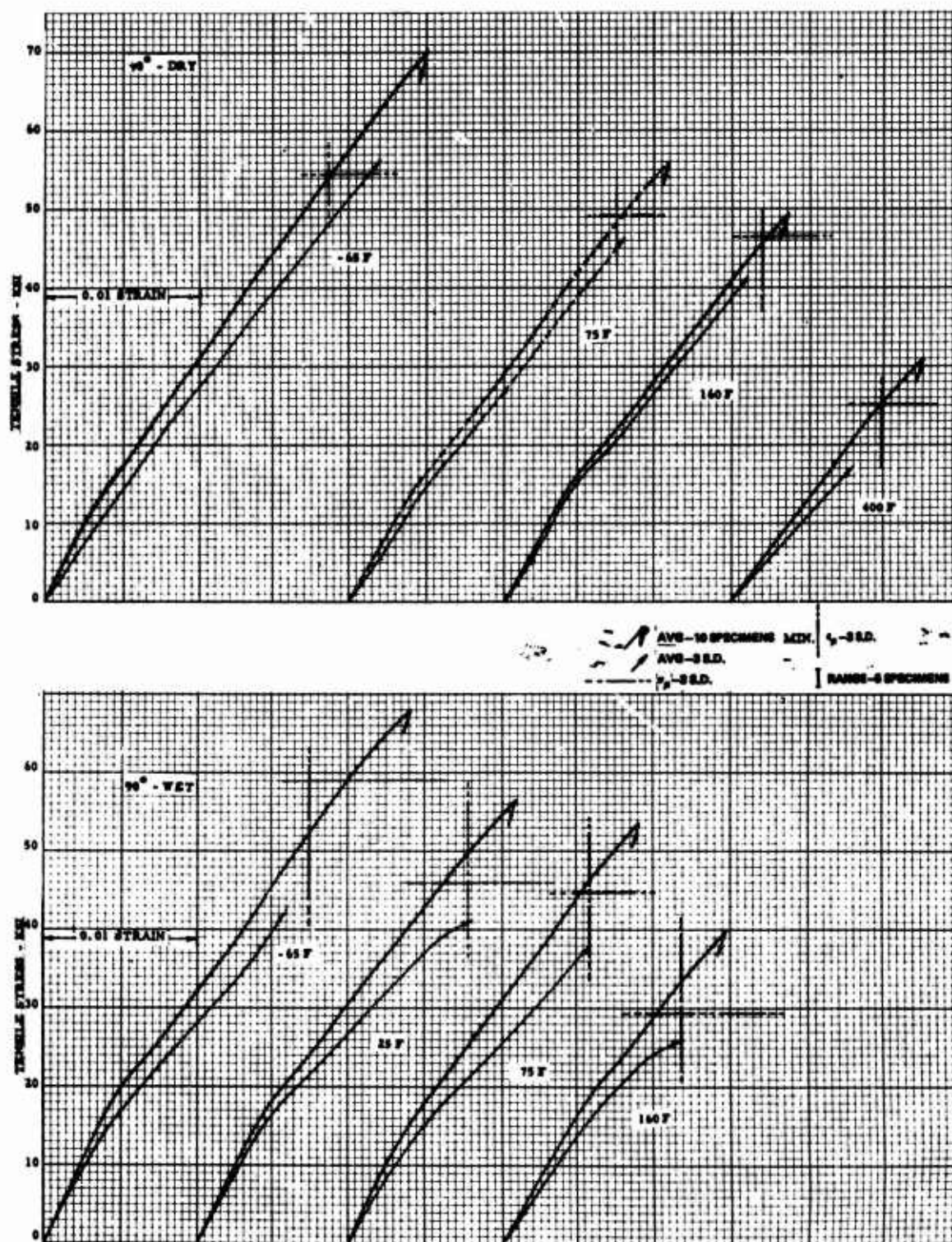


FIGURE 4.4.1 (b) TENSILE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 90° DIRECTION (31% RESIN)

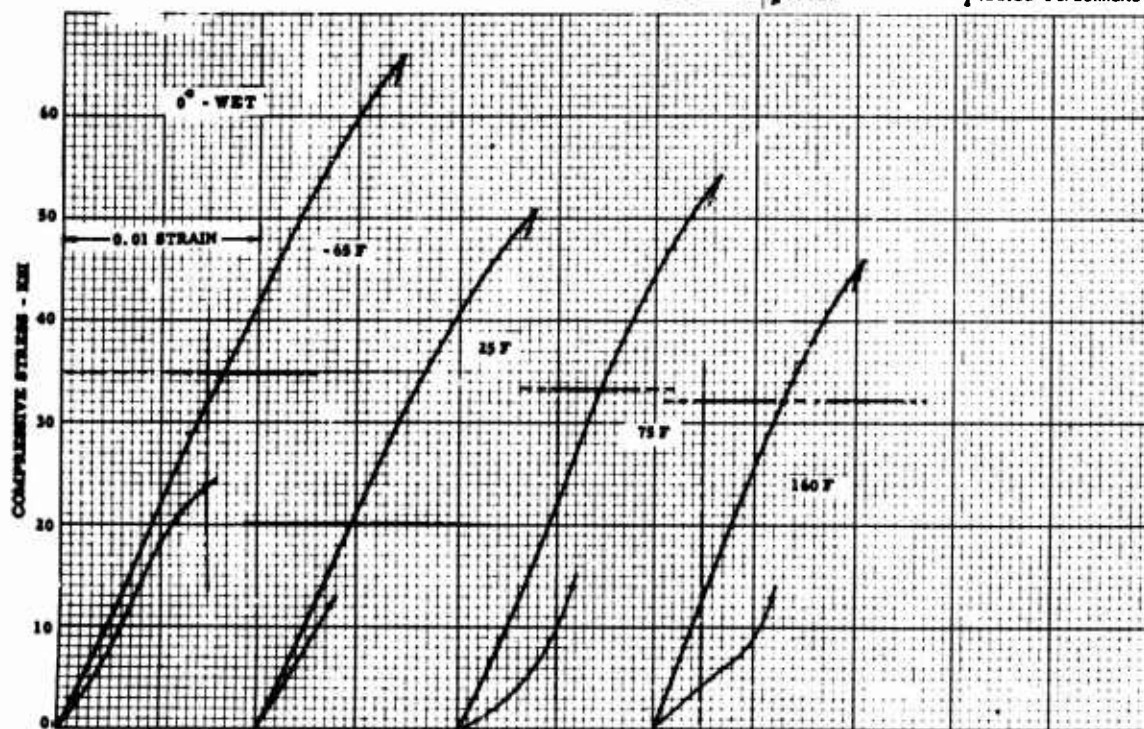
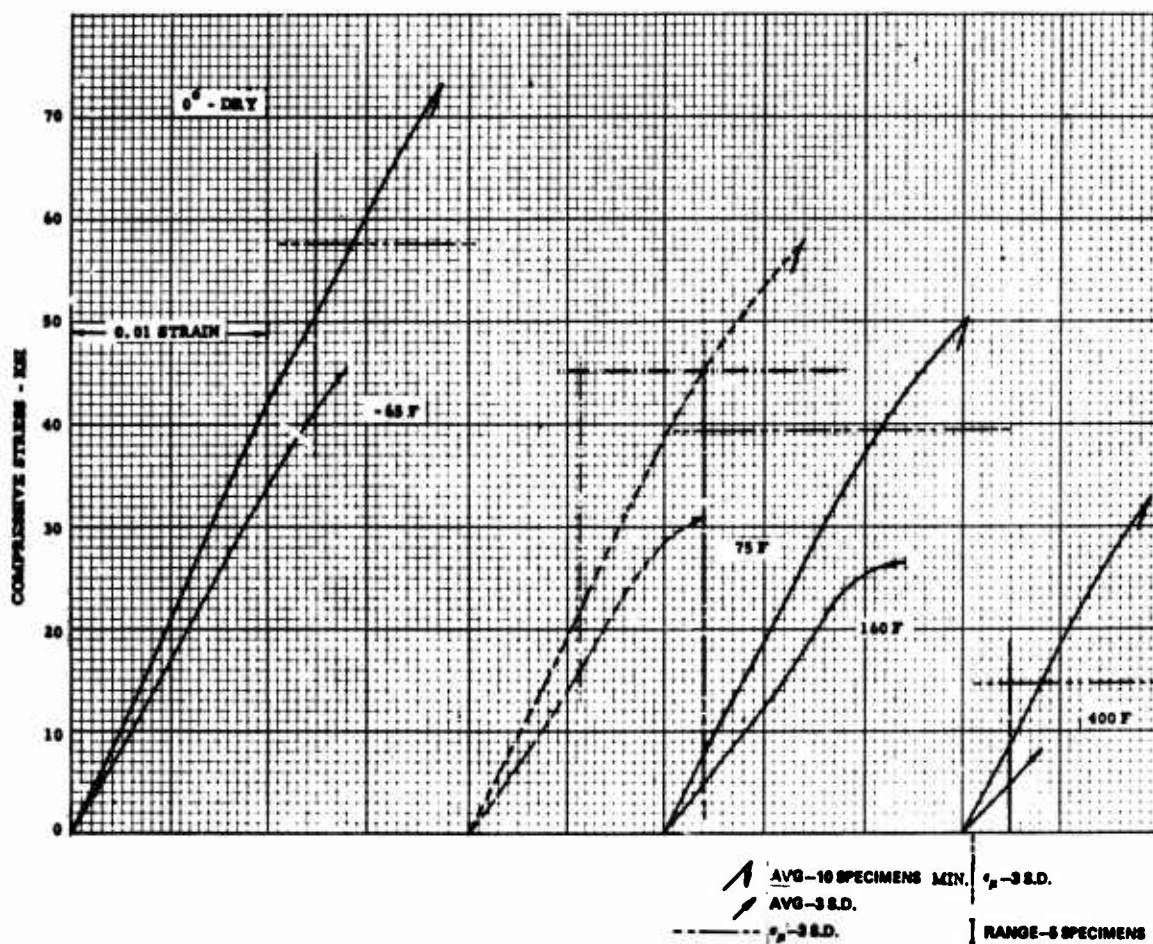


FIGURE 4.6.2(a) COMPRESSIVE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 0° DIRECTION (31% RESIN)

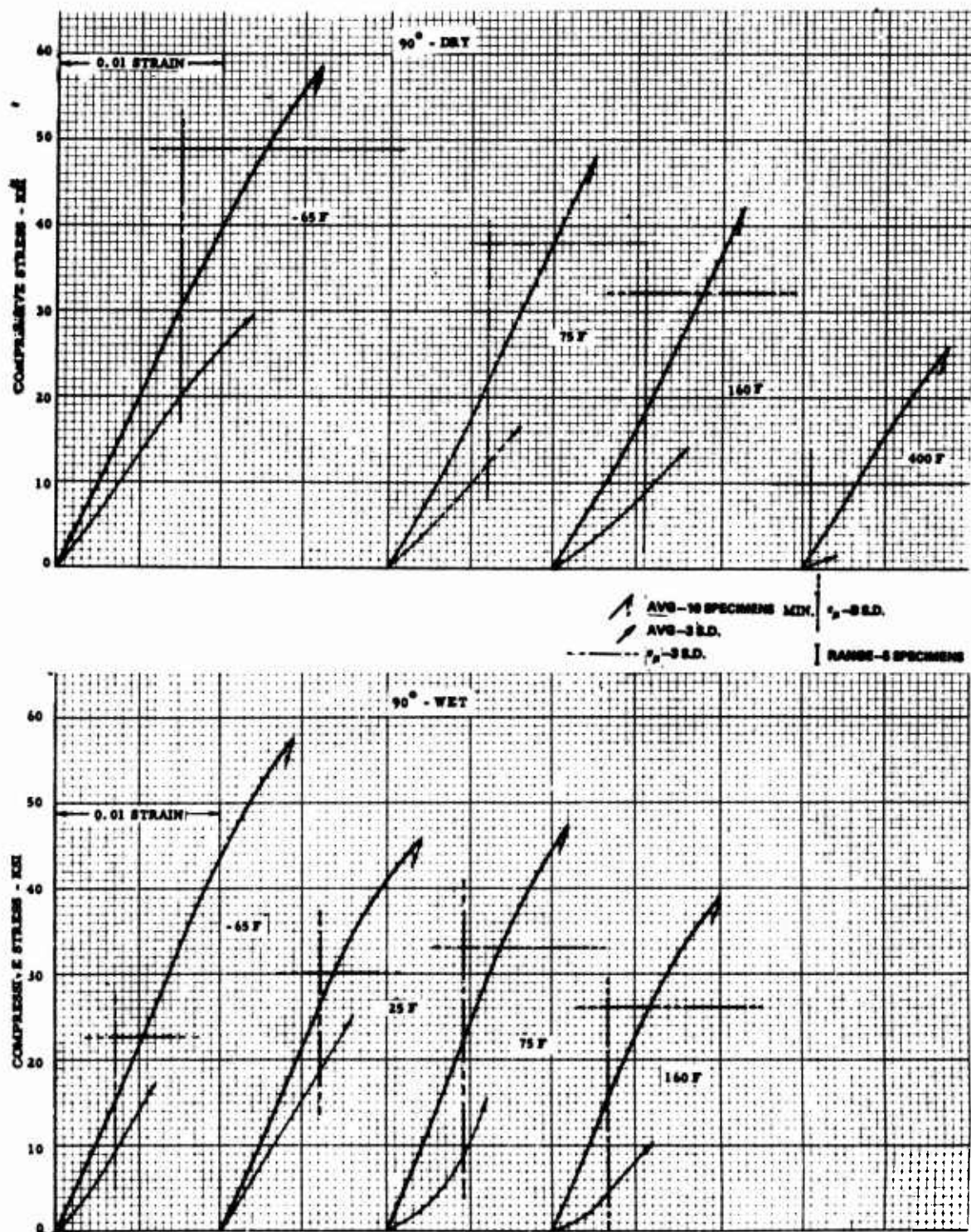


FIGURE 4.6.2 (b) COMPRESSIVE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 90° DIRECTION (31% RESIN)

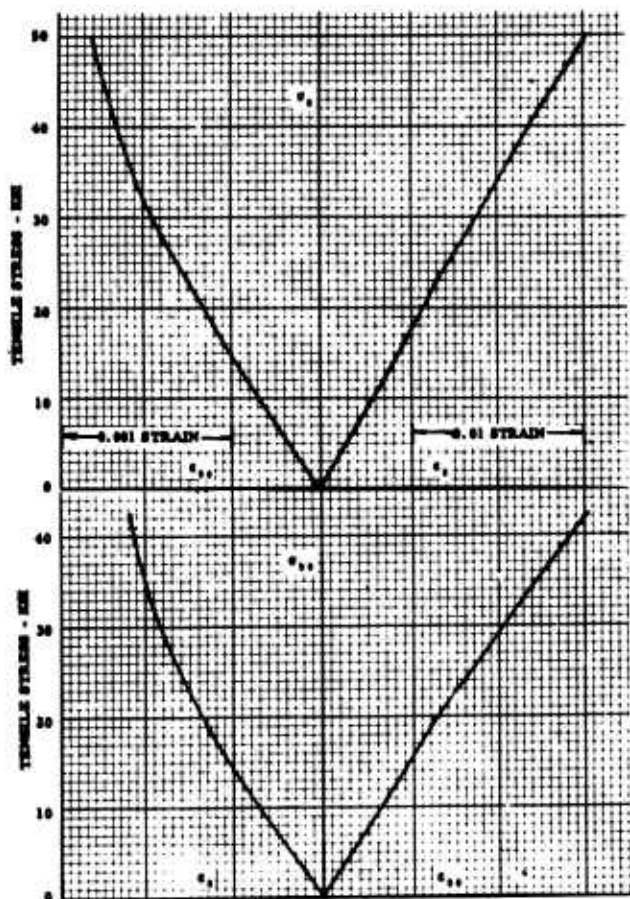


FIGURE 4.6.4 POISSON EFFECTS FOR F161/7501 FIBERGLASS EPOXY (31% RESIN)

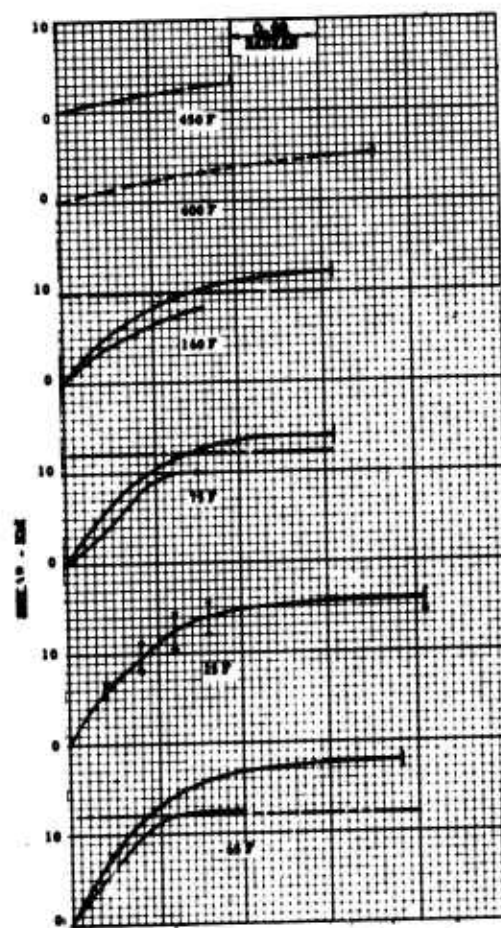


FIGURE 4.6.3 0°-90° PICTURE FRAME SHEAR FOR F161/7501 FIBERGLASS EPOXY (31% RESIN)

3.4 GROUP III (35.6% Resin Content) Laminates

The specific data in tabular form for laminates of this resin content are reported in Appendix III in the following manner:

Tension - Tables AIII-1 to AIII-18

Compression - Tables AIII-19 to AIII-36

Picture Frame Shear - Tables AIII-37 to AIII-42

Poisson's Ratio - Tables AIII-43 to AIII-44

3.4.1 SUMMARY DATA

Table 3-4 summarizes the primary mechanical properties of 36% average resin content laminates. All values, except flexural strength, are from either Appendix III data or the graph of para. 3.4.2 (on laminates of 0.08 inch nominal thickness). The flexural strength data is from Quality Control Testing (see para. 3.5) of .125 inch nominal thickness laminates.

3.4.2 GRAPHICAL DATA

Figure numbers 4.7.1, 4.7.2, 4.7.3, and 4.7.4 (to be in revised MIL-HDBK-17) are graphical representations of the data given in Table 3-4 and Appendix III. Note that the arrow-heads of the stress-strain curve of average minus 3 times the standard deviation (AVG. -3 S.D.) indicate the highest strain level for which stress readings for all specimens in the sample were recorded.

TABLE 4 SUMMARY OF MECHANICAL PROPERTIES - GROUP III LAMINATES

THICKNESS		PLIES: 8		INCHES: .0101 (AVERAGE - PER PLY)															
FABRICATION		LAY UP: BALANCED, PARALLEL		VACUUM: NONE		PRESSURE: 60 + 5 PSI		BLEEDOUT: VERT. & STEPPED EDGE		CURE: 1 HR @ 350F		POSTCURE: 2 HR @ 300F & 2.5 HR @ 400F							
PHYSICAL PROPERTIES		WEIGHT PERCENT RESIN: 35.6 (AVERAGE)		SPECIFIC GRAVITY: 1.855 (AVERAGE)		PERCENT VOIDS (BY VOLUME): 0.9 (APPROX)		BARCOL HARDNESS: 75 (AVERAGE)											
TEMPERATURE CONDITION	ORIENTATION	-65F		25F		RT		160F		220F		400F		450F					
		DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET	DRY	WET				
TENSION: σ_u , KSI	0°	83.9	2.85	73.0	2.89	64.4	-	55.5	2.57	61.9	2.24	45.0	1.86	39.2	3.40	36.7	-		
	90°	68.7	4.19	63.9	1.61	53.7	-	48.9	2.67	51.9	3.26	37.6	0.99	32.0	1.44	28.3	-		
	0°	3.30	.184	2.79	.023	2.38	-	2.12	.135	2.61	.079	1.59	.089	1.42	-	1.46	1.39		
	90°	2.80	.177	2.61	.046	2.15	-	1.95	.086	2.18	.196	1.50	.047	1.35	-	1.36	1.22		
	0°	3.84		3.81		4.08		3.58		3.25		3.35		3.18		2.96	2.79		
COMPRESSION: σ_u , KSI	0°	3.67		3.81		3.62		3.30		3.13		3.18		2.76		2.51	2.33		
	90°	2.81		2.75		3.09		3.04		2.49		3.04		2.82		2.74	2.61		
	0°	2.65		2.67		2.86		2.72		2.39		2.70		2.46		2.22	2.09		
	90°	76.2	5.86	68.8	4.36	59.6	-	55.1	2.93	54.7	5.49	46.0	5.66	42.4	-	31.0	8.08	15.5	
	0°	56.0	4.56	62.9	6.32	50.7	-	47.0	6.78	36.9	1.47	35.3	3.30	29.0	-	23.2	3.26	11.7	
FLEXURE: σ_u , KSI	0°	2.13	.282	1.84	.233	1.80	-	1.36	.323	1.90	.575	1.32	.241	1.25	-	1.02	.228	0.47	
	90°	1.75	.476	1.58	.572	1.32	-	2.00	.896	1.29	.089	1.27	.240	1.09	-	0.91	.139	0.45	
	0°	28		24		22		24		32		22		-		17	12	-	
	90°	18		17		-		16		28		17		13		12	-	-	
	0°	3.41		4.04		3.96		3.87		3.45		3.36		3.22		2.57		2.79	
SHEAR: τ , KSI	0°/90°	3.11		3.74		3.70		3.64		2.87		2.88		2.79		2.63		2.34	
	90°/0°	19.6	1.04	-	-	-	-	15.0	0.70	12.7	0.62	-	-	-	-	-	-	-	
TEMP - CONDITION		75F - DRY																	
		AVG		MAX		MIN													
FLEXURE: σ_u , KSI		86.31		92.16		79.07													

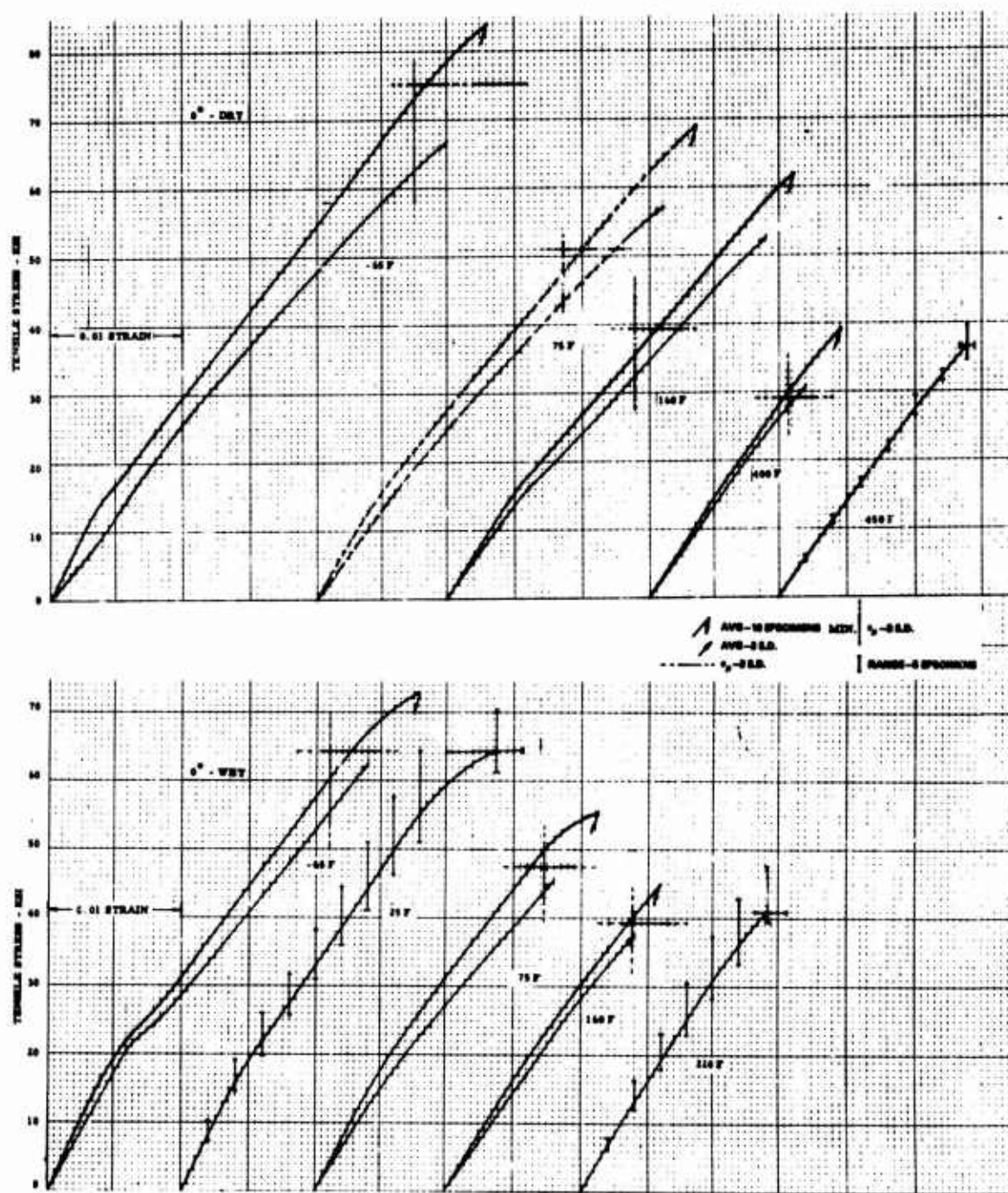


FIGURE 4.7.1 (a) TENSILE STRESS-STRAIN FOR F151/7561 FIBERGLASS EPOXY LOADED IN 0° DIRECTION (50% RESIN)

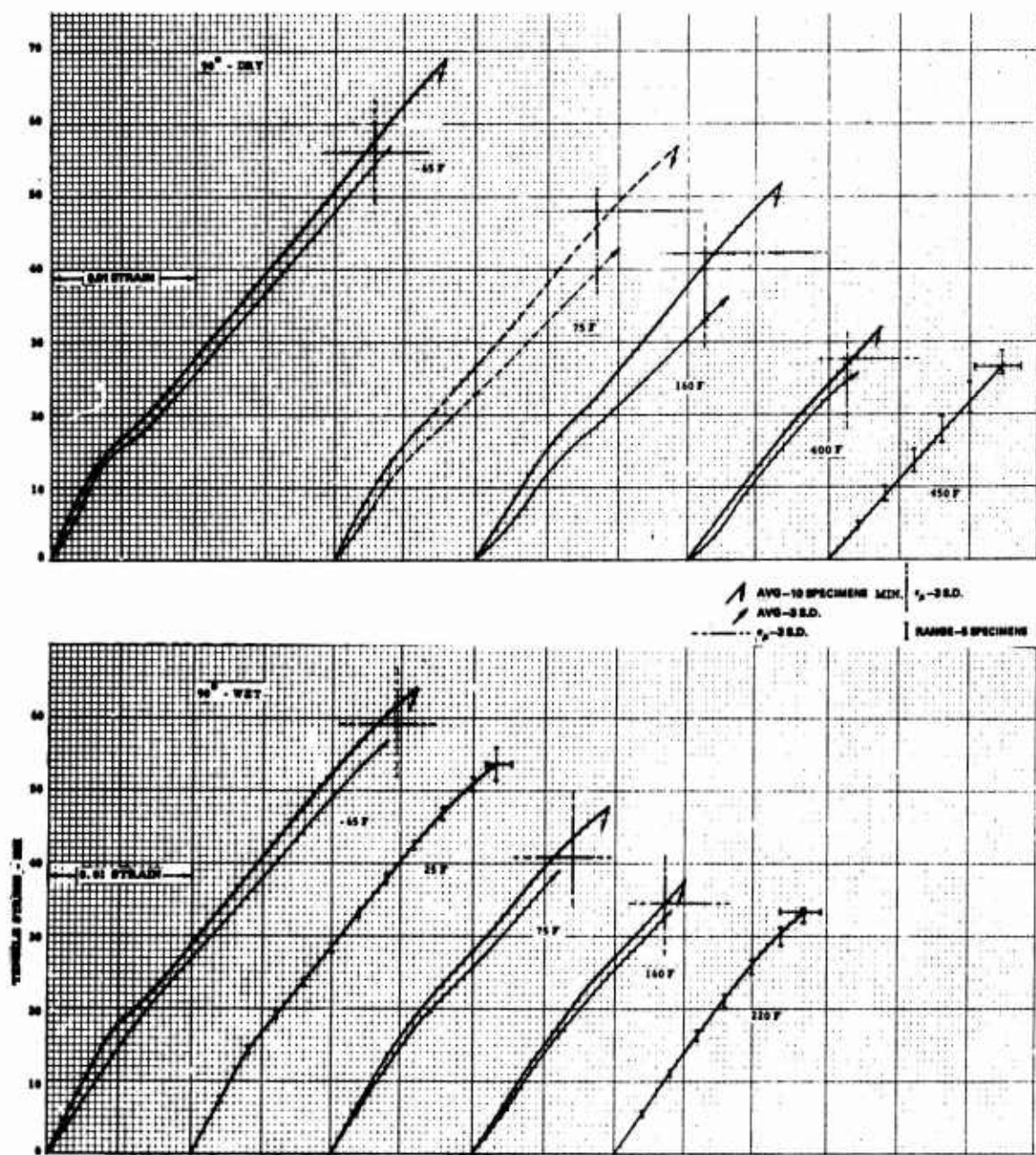


FIGURE 4.7.1(b) TENSILE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 90° DIRECTION (36% RESIN)

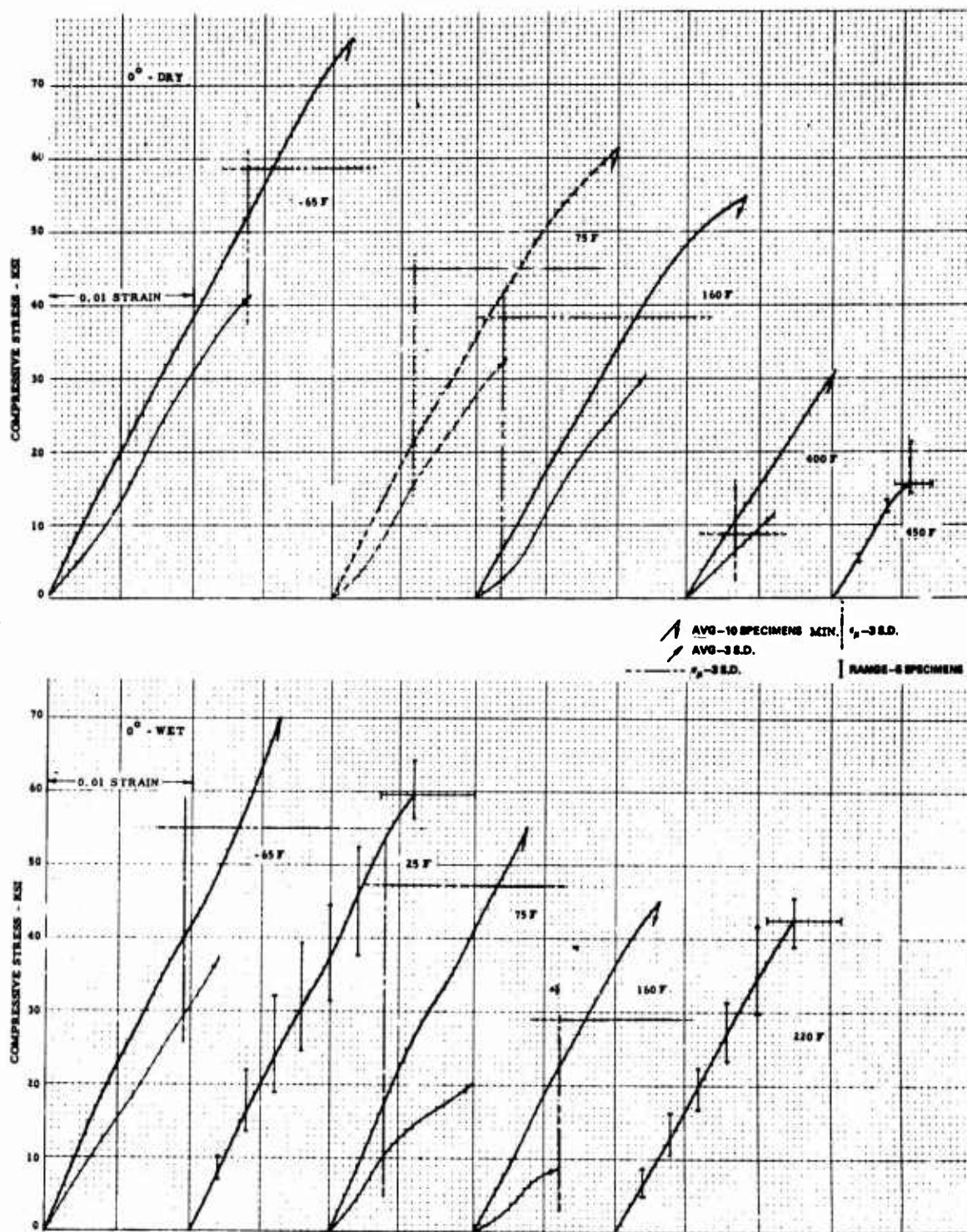


FIGURE 4.7.2 (a) COMPRESSIVE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 0° DIRECTION (36% RESIN)

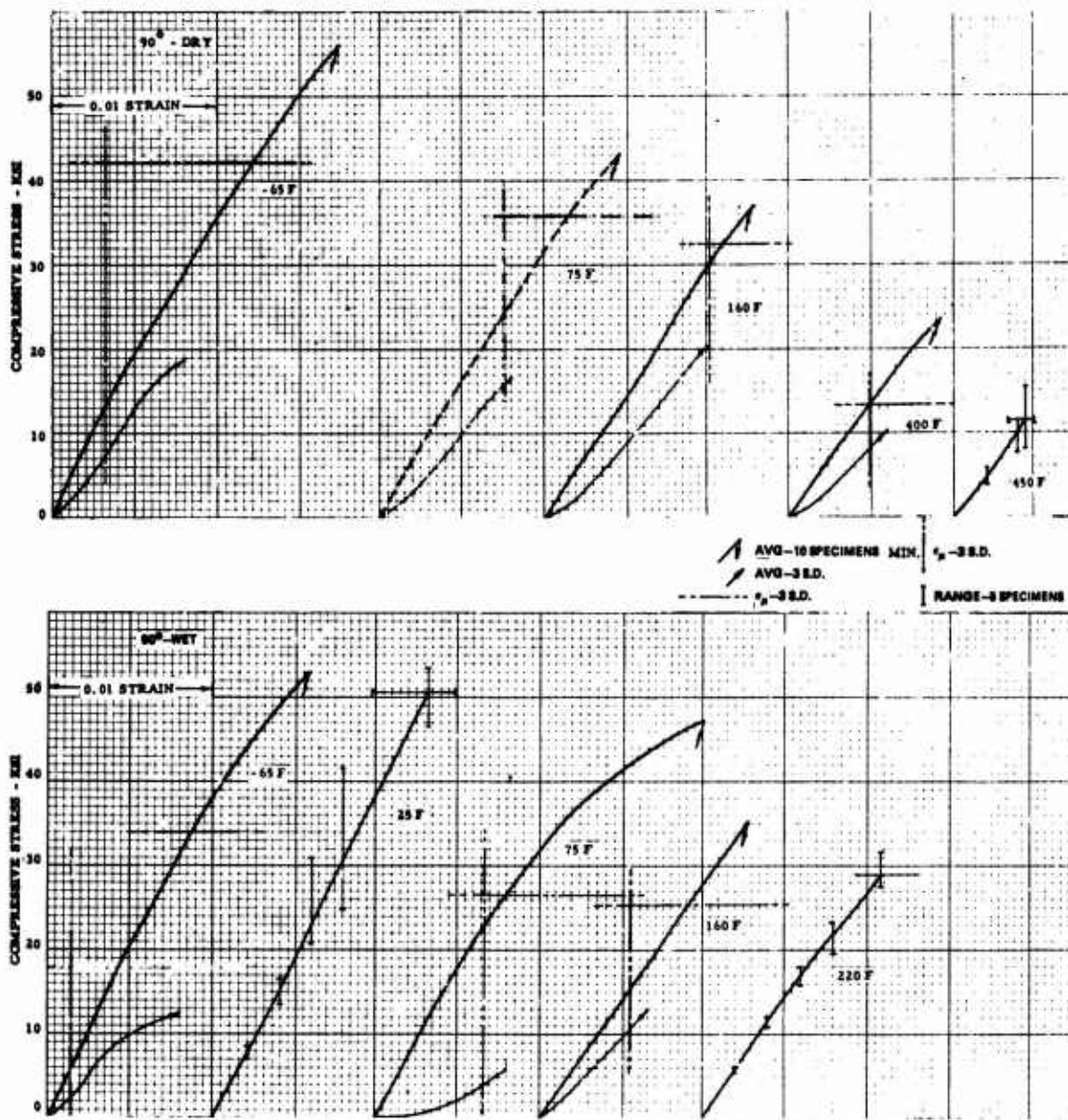


FIGURE 4.7.2(b) COMPRESSIVE STRESS-STRAIN FOR F161/7581 FIBERGLASS EPOXY LOADED IN 90° DIRECTION (36% RESIN)

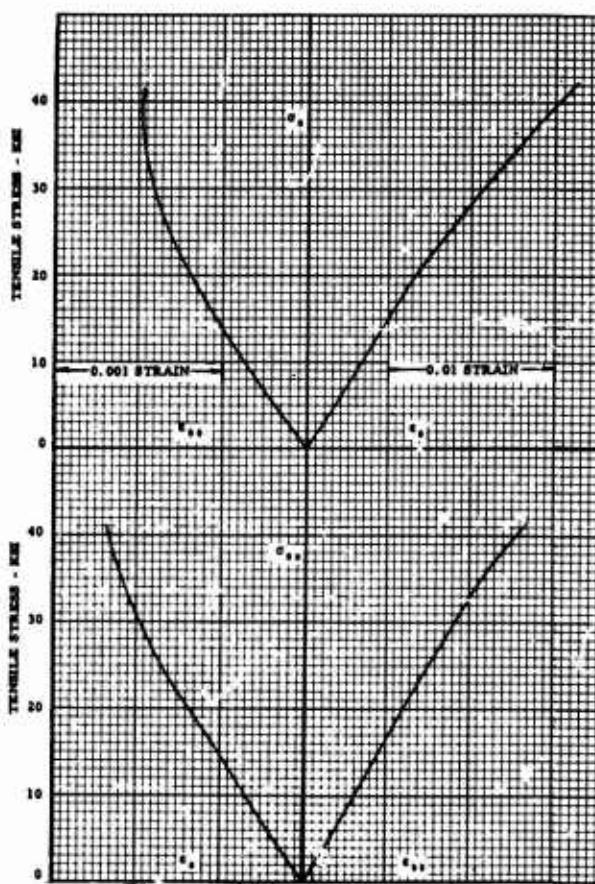


FIGURE 4.7.4 POISSON EFFECTS FOR F161/7581
FIBERGLASS EPOXY (36% RESIN)

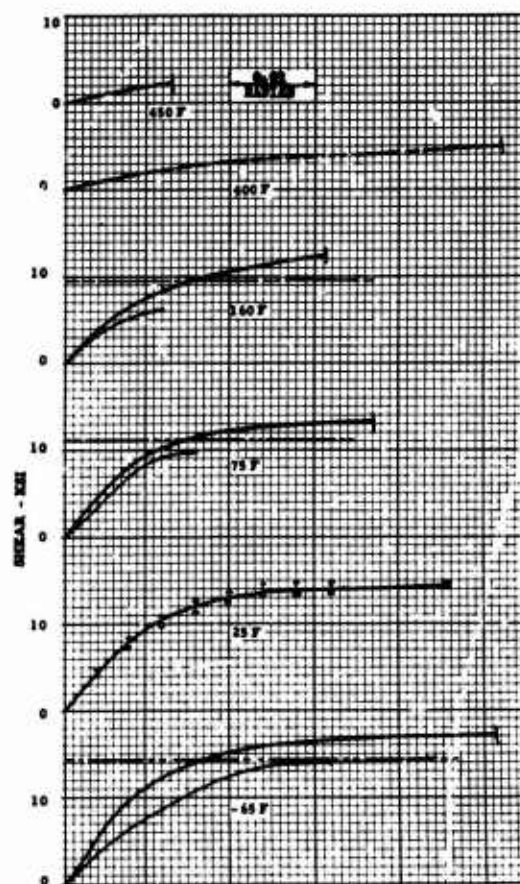


FIGURE 4.7.3 0°-90° PICTURE FRAME SHEAR FOR
F161/7581 FIBERGLASS EPOXY (36% RESIN)

3.5 QUALITY CONTROL TESTS AND DATA

To insure complete reliability and reproducibility of the material used in this program, Quality Control Testing was undertaken. The prepreg materials were tested for resin content, flow, and percent volatiles. The results of these tests were reported in para. 2.1. Mechanical testing was also conducted on parallel ply lay-up 12 inch by 15 inch by 14 ply thick panels made of each of the four (4) rolls of prepreg used to fabricate laminates (see Reference 1).

The mechanical tests performed were in accordance with the following ASTM methods:

ASTM D638-68	Tensile Properties of Plastic
ASTM D695-68T	Compressive Properties of Rigid Plastic
ASTM D790-66	Flexural Properties of Plastic
ASTM D2345-65T	Interlaminar Shear Strength of Plastic Structures at Subnormal and Supernormal Temperatures (notched tensile loading using side support plates)

The results of the tests run at room temperature follow:

	<u>PREPREG 7581/F161-505</u>			
	ROLL A*	ROLL B*	ROLL C*	ROLL D*
Laminate group(s) in which Prepreg was used	III	II	II & I	I
Tensile Strength, KSI **	65.45	69.11	69.05	73.92
Compressive Strength, KSI **	61.00	63.16	57.69	63.89
Flexural Strength, KSI **	88.37	92.14	90.80	97.41
Interlaminar Shear Strength, KSI ***	2.23	2.40	2.20	2.14

* The A, B, C, and D designations correspond to different prepreg resin content, flow, and volatiles to provide the three major resin content laminates (see Section 4 and Table 2-1)

** Average of 10 tests.

*** Average of 5 tests.

SECTION 4

DESCRIPTION OF SERIAL NUMBERED LAMINATES

4.1 FABRICATION FROM PREPREG MATERIAL

As noted in para. 2.2, the laminates tested were constructed of eight (8) and ten (10) ply layups. There were four (4) rolls of 7581/F161-505 prepreg material (identified by: A, B, C, and D) used in this program. The mechanical properties of these rolls are given in para. 3.5. These prepreg materials were distributed in the various serial numbered laminates in the following manner:

S/N 1 and S/N 2 - preliminary panels made for program guidance and not used to generate data

S/N 3	8 plies of roll A prepreg
S/N 4	8 plies of roll A prepreg
S/N 5	8 plies of roll C prepreg
S/N 6	8 plies of roll A prepreg
S/N 7	4 plies of roll A + 4 plies of roll B prepreg
S/N 8	10 plies of roll D prepreg
S/N 9	10 plies of roll C prepreg
S/N 10	6 plies of roll A + 4 plies of roll B prepreg
S/N 11	5 plies of roll A + 5 plies of roll B prepreg
S/N 12	10 plies of roll D prepreg
S/N 13	5 plies of roll C + 5 plies of roll B prepreg
S/N 14	1 ply of roll B + 7 plies of roll A* prepreg
S/N 15	1 ply of roll B + 4 plies of roll C* + 5 plies of roll A* prepreg
S/N 16	1 ply of roll B + 7 plies of roll A* prepreg

* These plies were from a second shipment of prepreg required to complete the contract.

4.2 DISTRIBUTION OF LAMINATES INTO GROUPS

To meet the requirement of generating mechanical property data for material of various resin contents, the serially numbered laminate panels were collected in groups, as follows:

GROUP I - (26% average resin content)

S/N 5, S/N 8, S/N 9, S/N 12, and S/N 13

GROUP II - (31% average resin content)

S/N 7, S/N 10, S/N 11, and S/N 15

GROUP III - (35.6% average resin content)

S/N 3, S/N 4, S/N 6, S/N 14, and S/N 16

SECTION 5

REFERENCES

1. Dastin, S.J., Lubin, G., and Munyak, J.A., Determination of Principal Properties of Fiberglass - Epoxy Laminates for Aircraft - First Quarterly Report, February 1968.
2. op. cit. - Second Quarterly Report, May 1968

SECTION 6

APPENDICES

APPENDIX I - Tabular Test Data-Group I (26% Resin Content) Laminates

Tension: Tables AI-1 to AI-18

Compression: Tables AI-19 to AI-36

Picture Frame Shear: Tables AI-37 to AI-40

Poisson's Ratio: Tables AI-41 to AI-43

APPENDIX II - Tabular Test Data-Group II (31% Resin Content) Laminates

Tension: Tables AII-1 to AII-14

Compression: Tables AII-15 to AII-28

Picture Frame Shear: Tables AII-29 to AII-34

Poisson's Ratio: Tables AII-35 to AII-38

APPENDIX III - Tabular Test Data-Group III (35.6% Resin Content) Laminates

Tension: Tables AIII-1 to AIII-18

Compression: Tables AIII-19 to AIII-36

Picture Frame Shear: Tables AIII-37 to AIII-42

Poisson's Ratio: Tables AIII-43 to AIII-44

TABLE - AI-1 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING						TEST COND.	RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 13, S/N 9, S/N 5	TENSION	0°	-66° F FOR 1 HR						-66° F FOR 30 MIN	26.0%				.0082			
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI															
S/N 9 - 111	.082 .498	07.3	14.7	22.0	29.4	36.8	42.5	49.0	55.0	61.0	67.1	73.0	78.0			80.8	.0247
118	.082 .497	08.6	16.5	22.2	27.5	33.9	40.6	46.7	52.9	59.0	65.5	71.3	77.5	82.5	88.3		.0290
127	.085 .499	08.7	17.0	22.2	27.7	33.8	40.0	46.0	51.9	57.8	64.1	69.6	75.5	80.5	83.7		.0282
130	.083 .498	08.5	16.4	21.8	27.8	33.9	40.6	46.6	52.5	58.5	64.5	70.6	76.7	82.5	87.8	93.0	.0310
132	.081 .496	09.5	17.4	22.9	28.9	35.1	42.4	48.5	54.5	60.5	66.7	72.3	78.5	84.6	90.0		.0286
133	.081 .498	09.9	17.3	23.3	29.5	36.0	42.1	48.3	54.5	60.7	66.9	73.0	79.3	84.6	89.4		.0294
136	.082 .495	09.9	17.3	22.9	29.3	36.8	42.1	48.5	54.7	60.3	66.5	72.6	78.9	84.9	90.6		.0290
149	.080 .497	08.5	17.3	22.6	28.9	35.4	41.9	47.7	54.3	60.3	66.5	72.9	78.6	84.4	90.3	90.3	.0318
S/N 5 - 88A	.088 .498	08.9	17.1	22.4	28.0	33.9	40.2	46.3	52.8	59.0	63.6	69.3	75.3	81.0	87.4		.0300
100A	.067 .497	09.0	16.8	22.6	28.2	34.6	40.5	46.5	52.5	58.5	64.6	70.5	76.5	82.5	87.4		.0295
AVERAGE STRESS																	
STANDARD DEVIATION STRESS																	
AVERAGE STRESS-3σ																	

FOOTNOTES: (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AI-1 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.	NOMINAL PER PLY THICKNESS												
S/N13/S/N9/S/N5	TENSION	0°	-65°F For 1 HR				-65°F For 30 Min				26.0%													
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030								
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																					
S/N 13 - 126	.083 .496		08.8	17.0	24.6	32.6	40.1	46.7	54.3	60.8	67.0	73.7	79.7					84.5	.0233	.0411				
128	.079 .497		07.7	14.5	21.7	29.1	36.4	43.4	50.8	58.0	64.5	71.6	78.0	82.2				85.8	.0266	.0392				
130	.083 .494		08.8	17.6	23.2	29.3	35.4	42.2	47.3	54.9	61.1	67.3	73.6	80.0	86.5	93.2		96.2	.0290	.0410				
134	.081 .496		10.7	19.4	24.8	31.1	38.6	44.8	51.8	58.5	64.6	71.0	77.4	84.0	89.9			93.0	.0270	.0402				
143	.082 .496		11.1	18.9	24.6	31.2	37.8	44.2	50.9	57.2	63.4	70.0	76.1	82.5	89.0	94.5		98.3	.0295	.0407				
145	.082 .496		11.1	19.4	24.6	30.7	37.0	43.8	50.4	56.7	63.0	69.0	75.0	81.0	87.8	93.8	97.7	98.0	.0301	.0407				
147	.082 .497		11.1	19.7	25.8	32.0	38.5	45.4	52.0	58.2	64.9	71.2	77.4	83.5	89.5	95.8		98.2	.0292	.0407				
148	.082 .497		10.3	19.2	24.6	31.0	37.3	44.3	50.4	56.7	62.9	67.0	75.0	81.0	87.1	93.3		96.5	.0293	.0407				
149	.082 .498		10.1	18.4	23.8	30.0	36.8	43.2	50.0	56.4	62.4	68.7	75.0	81.0	87.1			91.0	.0272	.0408				
150	.081 .491		11.1	20.1	25.2	31.7	38.4	45.7	52.7	59.0	65.0	71.5	77.9	84.1	90.0			93.9	.0277	.0398				
AVERAGE STRESS			9.3	17.6	23.4	29.7	36.2	42.8	48.8	55.4	61.7	67.8	74.0					92.4	.0286					
STANDARD DEVIATION STRESS			1.10	1.53	1.45	1.52	1.86	1.69	2.20	2.48	2.59	2.65	3.03					5.16	.00211					
AVERAGE STRESS-3σ			6.0	13.0	19.0	25.1	30.8	37.7	42.2	49.0	53.9	59.9	65.9					77.0	.0205					

FOOTNOTES: (1) TO NEAREST .001"
(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
(C) CURVE EXCEEDED THE GRAPH PAPER
(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
(II) CURVE IDEALIZED

TABLE - AI-2 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(II) CURVE IDEALIZED

TABLE - A1-2 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS					
S/N 9, S/N 5 S/N 12	TENSION	90°	-65° F FOR 1 HR								-65° FOR 30 MIN				26.0%				.0032					
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030				MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																					
S/N 12 - 139	.085	.489	07.7	14.9	18.7	23.2	27.9	32.4	37.2	42.1	46.4	50.5	54.7	-	-	-	-	-	56.0	.0226	.0416			
178	.083	.498	08.7	15.8	19.5	24.2	29.1	33.6	38.5	43.0	47.6	52.0	56.4	-	-	-	-	-	57.3	.0228	.0405			
184	.081	.489	08.3	15.8	20.2	24.5	29.8	34.1	39.2	44.2	48.5	53.0	-	-	-	-	-	-	57.0	.0216	.0396			
192	.083	.498	08.9	16.0	19.7	24.6	29.8	34.4	39.4	43.8	48.8	53.0	57.1	-	-	-	-	-	58.5	.0228	.0406			
197	.087	.487	08.7	15.4	19.4	23.6	28.1	33.1	37.8	42.5	47.3	51.3	-	-	-	-	-	-	54.5	.0220	.0424			
199	.083	.495	08.8	16.4	20.0	25.4	30.2	34.6	39.8	44.4	48.8	-	-	-	-	-	-	-	52.0	.0194	.0410			
203	.077	.497	08.1	17.0	21.2	27.4	32.6	38.8	44.6	50.4	56.1	61.4	-	-	-	-	-	-	66.5	.0216	.0383			
205	.077	.495	10.0	17.2	22.8	28.9	34.2	40.2	46.0	51.2	57.8	62.5	67.5	-	-	-	-	-	68.8	.0224	.0331			
208	.077	.495	09.5	17.3	22.3	27.8	34.2	40.2	46.0	52.0	57.5	63.0	68.4	-	-	-	-	-	69.3	.0224	.0381			
211	.076	.496	09.3	17.3	22.3	28.1	34.2	39.8	45.9	51.2	57.0	63.1	67.6	-	-	-	-	-	69.0	.0226	.0377			
AVERAGE STRESS			9.0	16.0	20.7	26.0	31.4	36.8	42.2	47.4	52.2								67.8	.0242				
STANDARD DEVIATION STRESS			0.64	1.24	1.15	1.54	1.81	2.47	2.74	2.86	3.68								10.65	.00314				
AVERAGE STRESS-3σ			7.1	12.3	17.2	21.4	26.0	30.5	34.0	38.8	41.2								36.9	.0148				

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-3 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 5, S/N 9	TENSION	0°	95% RH @ 125° F FOR 42 DAYS										-65° F FOR 30 Min.				26.0%				.0083			
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030								
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																						
S/N 5-94	.087 .497	.093	18.6	25.5	31.6	37.8	46.1	50.5	57.7	63.6	69.4	75.9	81.0				87.5	.0260	.0323					
87	.086 .497	.092	18.3	25.6	31.1	37.8	44.3	50.3	56.7	64.0	69.5	78.4					79.6	.0240	.0328					
98	.087 .487	.092	19.0	26.8	31.3	37.4	44.1	50.7	57.0	63.5	70.0	78.5					79.0	.0234	.0326					
115	.086 .498	11.9	21.0	27.4	32.8	39.2	46.0	51.1									56.4	.0158	.0329					
92A	.067 .495	.091	18.1	25.4	31.6	37.7	43.4	49.8	56.4	62.4	68.6	74.1					75.0	.0224	.0332					
S/N 9 - 131	.084 .496	10.2	19.2	26.2	31.2	37.2	43.8	50.4	57.0	63.5	69.6	75.5	81.0				86.1	.0256	.0417					
134	.082 .497	.098	18.4	26.0	31.4	38.2	44.6	51.5	57.5	63.8	69.9	76.1					78.5	.0226	.0408					
146	.081 .498	.099	19.2	26.3	31.7	38.4	46.4	52.0	58.1	64.9	70.9	77.5	82.7	89.6			87.3	.0262	.0404					
147	.082 .496	11.1	19.7	25.6	31.8	38.2	44.4	51.2	57.9	64.0	70.2	76.4	82.5				88.0	.0238	.0406					
148	.081 .498	.093	18.6	25.0	31.2	38.4	44.6	51.0	58.1	64.4	70.5	77.3	83.0				88.4	.0256	.0404					
AVERAGE STRESS		2.8	19.0	25.6	31.6	38.0	44.5	50.8									80.5	.0231						
STANDARD DEVIATION STRESS		1.10	0.83	0.69	0.49	0.58	0.61	0.64									10.87	.0311						
AVERAGE STRESS-3σ		6.5	16.5	23.5	30.2	36.3	42.7	48.9									47.9	.0144						

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-4 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING					TEST COND.					RESIN CONT.				NOMINAL PER PLY THICKNESS		
S/N 5	TENSION	90°				96% RH @ 125°F FOR 42 DAYS					-65° F for 30 MIN.					28.0%				.0382		
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²			
SPEC. NO.	T ⁽¹⁾	STRESS - KSI																		W ⁽¹⁾		
S/N 5 - 29	.009	.006	.008	.016	.022	.027	.031	.036	.039	.041	.044	.049					.047	.0201	.0342			
33	.009	.009	.006	.018	.023	.028	.034	.039	.045	.047	.050						.059	.0196	.0344			
38	.007	.008	.001	.016	.022	.027	.031	.036	.040	.053	.057	.061					.069	(I)	.0334			
42	.007	.008	.009	.017	.022	.028	.032	.040	.045	.050	.053						.059	(I)	.0334			
47	.008	.008	.010	.018	.023	.029	.035	.040	.045								.051	.0165	.0329			
53	.004	.008	.014	.018	.024	.030	.036	.042	.048	.054							.056	.0168	.0319			
54	.003	.009	.015	.020	.025	.032	.037	.044	.050	.056	.062	.079					.071	.0212	.0314			
55	.002	.008	.015	.020	.025	.031	.037	.043	.049	.055							.059	.0174	.0314			
56	.003	.006	.009	.018	.024	.029	.036	.042	.048	.054	.060	.064	.071				.076	.0233	.0312			
50	.006	.008	.009	.017	.024	.030	.035	.040	.048	.053	.075	.026					.060	.0219	.0329			
AVERAGE STRESS																						
STANDARD DEVIATION STRESS																						
AVERAGE STRESS-30°																						

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-6 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - A1-6 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

III) CURVE IDEALIZED

TABLE - AI-7 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 5	TENSION	0°				125° F @ 95% RH FOR 42 DAYS				RT				28.0%							
STRAI IN./IN.	SPEC NO	002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN ²		
		STRESS - KSI																			
S/N 5 - 86	.087 .406	09.0	17.4	25.1	30.9	37.3	44.0	49.9	55.5								59.3	.0170	.0332		
96	.064 .406	09.0	17.6	24.9	31.2	37.4	44.3	50.7	56.9	62.8							64.0	.0192	.0318		
113	.086 .406	09.8	17.4	24.8	31.2	37.2	44.1	50.3									54.1	.0154	.0327		
88A	.068 .497	09.4	17.4	24.1	30.4	36.6	43.0	48.8	55.5	60.6							61.1	.0182	.0338		
93A	.068 .496	09.8	17.3	24.2	30.4	36.6	42.8	49.0	55.0								60.0	.0180	.0338		
90	.063 .497	10.1	18.6	26.2	32.0	39.1	45.8	52.6	59.3	64.4							64.9	.0185	.0313		
91	.063 .406	09.8	18.1	25.4	31.8	38.4	45.2	51.0	57.4								61.0	.0172	.0313		
93	.063 .495	08.6	16.7	24.7	31.2	37.7	44.2	50.9	57.0	61.7							62.0	.0184	.0312		
94	.063 .406	09.6	18.2	25.8	32.6	38.5	45.2	51.4	58.0								62.9	.0180	.0313		
96	.064 .406	09.4	17.9	26.0	32.5	39.2	45.5	51.9	58.5	63.8							64.5	.0185	.0318		
AVERAGE STRESS		09.5	17.7	25.3	31.4	37.8	44.4	50.6									61.4	.0178			
STANDARD DEVIATION STRESS		0.47	0.55	0.75	0.84	0.95	1.02	0.96									3.20	.00133			
AVERAGE STRESS-3σ		08.0	16.0	23.1	28.9	34.9	41.4	47.8									51.9	.0138			

FOOTNOTES
(1) TO NEAREST .001"

(I) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
(II) CURVE EXCEEDED THE GRAPH PAPER
(III) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
(IV) CURVE IDEALIZED

TABLE - AI-8 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING					TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 5	TENSION	90°			125° F @ 95% RH FOR 42 DAYS					RT				26.0%							
SPEC. NO.	STRAIN IN./IN.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI															MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030					
S/N 5 - 26	.008	.008	.400	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	49.9	.0170	.0339
26	.008	.408		.009	.16.4	.22.2	.27.4	.32.6	.38.2	.43.8	.48.5								49.1	.0193	.0339
31	.008	.409		.009	.16.9	.22.2	.27.4	.32.8	.38.5	.43.9									46.9	.0147	.0339
34	.008	.407		.002	.16.8	.22.2	.27.2	.32.6	.38.4	.43.4	.48.6								49.9	.0167	.0338
37	.008	.500		.003	.15.4	.21.5	.27.0	.32.2	.37.5	.43.2	.47.8								49.3	.0170	.0340
40	.008	.497		.001	.16.3	.22.2	.27.7	.32.8	.38.7	.44.2									48.2	.0157	.0338
43	.008	.498		.008	.16.8	.22.8	.28.0	.33.8	.40.0	.45.7	.51.2								53.0	.0188	.0328
46	.006	.502		.001	.15.4	.21.4	.26.8	.32.1	.38.0	.43.3	.48.4								50.0	.0188	.0336
49	.008	.500		.003	.16.5	.22.7	.28.0	.33.8	.39.8	.45.0	.50.9								53.2	.0170	.0330
57	.003	.497		.008	.17.5	.23.8	.29.3	.35.4	.42.0	.48.4	.53.9								54.6	.0169	.0313
AVERAGE STRESS				8.7	16.2	22.2	27.7	33.0	38.8	44.5									50.3	.0185	
STANDARD DEVIATION STRESS				.48	.70	.77	.81	1.05	1.41	1.78									2.81	.00075	
AVERAGE STRESS-3σ				7.3	14.1	19.9	25.3	29.9	34.6	39.2									42.5	.01425	

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - A1-9 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.			RESIN CONT.			NOMINAL PER PLY THICKNESS				
S/N 13, S/N 8	TENSION	σ°	NONE										160°F FOR 30 MIN			28.0%			.0080				
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²				
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																					
S/N 3 - 87	.086 .404	07.5	15.3	21.2	27.1	33.0	38.8	44.7	50.6	56.5	62.4	-					64.6	.0214	.0425				
89	.083 .489	08.3	15.4	21.8	28.0	33.8	40.5	46.3	52.2	58.1	64.0	-					66.5	.0216	.0421				
90	.082 .487	08.8	16.8	22.8	29.5	36.5	42.5	49.0	55.5	61.2	66.2	-					68.5	.0208	.0400				
91	.079 .488	08.4	16.6	22.8	29.0	36.0	42.0	48.5	54.4	60.6	66.5	-					70.0	.0214	.0386				
92	.079 .483	08.9	16.8	23.1	29.1	36.4	42.1	48.5	55.5	61.5	66.8	-					69.4	.0208	.0382				
100	.072 .404	09.3	17.5	24.0	31.0	38.0	46.0	53.0	59.7	66.2	-						70.3	.0194	.0355				
105	.077 .489	08.8	17.0	23.1	29.2	36.6	42.2	48.5	54.4	60.5	-						85.0	.0198	.0377				
104	.077 .487	08.5	16.3	22.6	28.8	36.2	42.1	48.5	54.6	60.8	-						64.3	.0196	.0375				
106	.078 .489	08.4	16.7	22.3	28.3	34.6	41.4	48.0	53.6	60.0	-						64.0	.0196	.0382				
108	.077 .485	08.0	16.1	22.2	28.2	36.3	41.7	48.1	54.9	-							59.9	.0180	.0374				
AVERAGE STRESS									DATA CONTINUED ON NEXT PAGE														
STANDARD DEVIATION STRESS																							
AVERAGE STRESS-30'																							

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE . AI-9 REDUCED TEST DATA

DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING					TEST COND.					RESIN CONT		NOMINAL PER PLY THICKNESS			
S/N 13, S/N 8	TENSION	0°		NONE					160° F FOR 30 MIN					26.0%		.0080			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA $\frac{1}{2}$
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
S/N 13 - 127	.081 .497	09.2	17.1	23.4	29.8	36.6	42.7	49.2	55.7	61.5							63.0	.0184	.0403
129	.079 .497	08.2	16.1	24.0	31.4	38.6	46.0	52.0	58.0								64.0	.0177	.0392
131	.082 .497	08.6	16.9	24.5	31.4	38.5	46.1	51.5	58.3	64.7							65.2	.0182	.0408
135	.082 .495	10.3	19.2	24.6	31.2	38.4	44.8	51.6	58.5								62.0	.0172	.0408
144	.082 .497	10.0	18.1	24.2	30.8	37.8	44.1	50.7	57.4	63.3							67.8	.0194	.0408

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AI-10 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.				RESIN CONT.		NOMINAL PER PLY THICKNESS							
S/N 12, S/N 5, S/N 6, S/N 9	TENSION	90°	NONE										160° FOR 30 MIN.				28.0%		.0081							
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2							
SPEC. NO	T (1) W (1)	STRESS - KSI																								
S/N 8 - 56	.076 .489	08.1	15.3	20.7	26.1	31.8	37.6	43.3	49.0	54.0							59.1	.0198	.0372							
56	.077 .490	08.6	16.4	21.8	27.9	33.5	39.8	46.4	50.5	56.3							58.4	.0190	.0377							
57	.076 .490	08.1	15.2	20.4	26.6	32.0	38.2	44.4	49.8	55.1							57.5	.0190	.0372							
S/N 5 - 1	.067 .488	06.9	13.5	18.3	23.6	28.8	33.8	38.9	44.6								49.7	.0180	.0334							
8	.067 .488	06.0	12.3	18.6	24.8	30.2	36.0	41.0	45.8								49.8	.0174	.0334							
19	.067 .500	06.6	13.2	20.0	25.7	31.4	37	42.5	47.8	52.6							56.8	.0190	.0335							
S/N 9 - 120	.085 .486	07.6	15.2	20.4	25.7	31.4	36.8	42.3	47.0	52.2	(1)						56.8	.0194	.0421							
124	.083 .494	06.6	13.2	19.2	24.4	30.2	36.1	41.7	47.3	52.2	57.6						62.7	(1) .0219	.0410							
140	.083 .497	07.3	14.0	19.7	25.2	31.2	36.8	42.6	48.0	53.3	(1) 58.5						62.1	(1) .0213	.0413							
142	.083 .497	06.9	13.5	18.4	23.8	29.6	35.0	40.3	46.0	50.9							55.0	.0196	.0413							
AVERAGE STRESS										DATA CONTINUED ON NEXT PAGE																
STANDARD DEVIATION STRESS																										
AVERAGE STRESS-3σ																										

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AI-10 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS							
S/N 12, S/N 8, S/N 5, S/N 9	TENSION	90°				NONE				180°F FOR 30 MIN				2% 0%				.008:							
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS		AREA $\frac{IN^2}{IN}$				
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																							
S/N - 12 - 120	.077 .494	06.3	12.6	19.2	25.0	30.8	36.1	41.6	46.4								50.9	.0178			.0380				
172	.084 .495	08.5	13.0	17.8	22.1	27.2	31.8	37.8	42.3								44.7	.0178			.0416				
180	.085 .496	08.2	12.3	17.2	21.4	26.6	31.4	36.1	40.4	44.9							46.9	.0180			.0421				
190	.082 .499	08.2	12.5	17.5	22.0	27.0	32.2	37.2	41.4	46.0							49.5	.0188			.0401				
196	.083 .487	08.4	13.1	17.7	22.5	27.6	32.4	37.0	41.2	46.7							47.9	.0180			.0405				
198	.082 .482	08.7	13.4	18.1	22.8	28.2	34.0	38.3	42.6	47.2							48.1	.0182			.0433				
202	.076 .490	07.0	14.2	19.9	25.3	31.5	37.4	43.0	48.4								53.8	.0180			.0372				
204	.076 .497	08.5	15.9	21.2	27.0	32.8	38.6	44.1	49.8								53.5	.0174			.0378				
206	.076 .496	07.4	14.9	19.9	25.5	31.8	37.7	43.5	49.3								53.6	.0176			.0377				
208	.076 .496	07.4	14.9	20.2	25.8	31.8	37.7	43.5	49.0								54.1	.0178			.0377				
AVERAGE STRESS		7.1	14.0	20.3	24.6	30.3	36.8	41.1	46.3								53.6	.0188							
STANDARD DEVIATION STRESS		.91	1.23	1.86	1.79	2.06	2.49	26.9	3.44								5.19	.00123							
AVERAGE STRESS-90°		4.4	10.3	15.3	18.3	24.1	28.3	32.1	36.0								38.2	.0151							

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(E) CURVE IDEALIZED

TABLE - AI-11 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS		
S/N 5, S/N 9	TENSION	0°	95% RH @ 125° F FOR 48 DAYS								160° F FOR 10 MIN				28.0%				.0083		
STRAIN IN./IN.		STRESS - KSI																			
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2	
S/N 5 - 86	.006	.497	08.6	16.9	23.8	30.8	37.5	43.6	49.4									52.1	.0150	.0328	
112	.067	.488	08.9	17.4	24.2	31.2	37.5											43.5	.0120	.0328	
90A	.008	.496	08.9	16.5	23.6	30.6	36.5											40.8	.0114	.0337	
96A	.067	.491	09.1	16.7	23.1	30.1	36.4	40.6	47.9									51.6	.0152	.0329	
98A	.008	.490	07.8	15.0	22.0	28.6	34.5	40.5										44.4	.0131	.0333	
S/N 9 - 126	.084	.497	07.2	14.0	21.1	27.8	34.8	42.0	49.1	55.1								56.7	.0168	.0417	
128	.082	.495	07.6	15.3	22.6	28.8	35.0	41.4	47.5	53.5								54.2	.0164	.0406	
129	.082	.494	08.2	16.1	22.7	28.9	35.8	42.0	48.1	54.4								55.0	.0164	.0405	
143	.082	.494	08.2	15.8	22.5	29.2	35.6	42.0	48.4									53.9	.0160	.0405	
144	.081	.490	08.8	16.4	23.1	27.8	35.5	42.9	49.5									54.6	.0158	.0397	
AVERAGE STRESS			08.5	16.0	22.9	29.4	35.9											50.7	.0158		
STANDARD DEVIATION STRESS			.88	1.01	.91	1.23	1.48											5.72	.00191		
AVERAGE STRESS-3σ			5.9	13.0	20.2	26.7	31.4											33.5	10.1		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-12 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING					TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS		
S/N 8	TENSION	90°			95% RH @ 125° F FOR 42 DAYS					160° F FOR 10 MIN.					26.0%					.0078		
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²			
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																				
S/N 8 - 31	.079 .402	07.7	14.4	19.7	24.7	29.6	34.4	39.4	-								41.9	.0151	.0380			
33	.079 .402	08.0	14.7	20.1	25.2	30.4	35.5	40.2	-								44.6	.0158	.0389			
35	.079 .402	07.6	14.4	20.1	24.7	29.8	35.0	39.6	-								44.4	.0160	.0389			
37	.078 .403	07.3	14.5	20.2	25.4	30.6	36.4	41.5	46.3								48.2	.0168	.0385			
39	.079 .402	07.7	14.4	20.6	25.7	30.8	36.0	41.1	-								44.7	.0158	.0390			
46	.077 .407	07.3	14.9	21.4	27.2	32.4	38.6	43.9	-								48.2	.0158	.0383			
48	.076 .407	07.9	15.4	21.7	27.0	32.8	38.6	44.0	-								49.3	.0158	.0378			
50	.076 .406	08.0	16.0	22.4	28.3	33.7	40.0	45.8	-								48.8	.0151	.0375			
52	.076 .406	09.2	16.2	22.6	28.4	34.0	39.9	-									43.5	.0130	.0371			
111	.077 .403	07.6	14.8	21.0	26.4	31.7	37.3	42.6	47.6								48.5	.0162	.0380			
AVERAGE STRESS		7.8	15.0	21.0	26.3	32.6	37.2										44.2	.0155				
STANDARD DEVIATION STRESS		0.53	0.71	1.02	1.39	1.82	2.02										2.69	.00101				
AVERAGE STRESS-σ		6.2	12.9	17.9	22.1	26.8	31.1										36.1	.0126				

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
- (C) CURVE EXCEEDED THE GRAPH PAPER
- (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
- (I) CURVE IDEALIZED

TABLE - AI-14 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

NO. 1) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

III) CURVE IDEALIZED

TABLE - AI-15 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING						TEST COND.	RESIN CONT.				NOMINAL PER PLY THICKNESS		
S/N 8	TENSION	0°	400°F FOR 100 HRS						400°F FOR 30 MINS	28.0%				.0079		
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI														
58	.076 .404	07.5	14.7	21.3	27.8	34.2	40.5	46.4	51.0	56.5	-	-	-	-	-	60.3
88	.086 .488	08.8	13.0	19.3	25.3	30.8	36.9	42.6	48.1	53.0	-	-	-	-	-	55.7
96	.077 .403	07.4	14.7	21.8	27.9	34.2	41.1	46.8	52.6	57.9	62.4	-	-	-	-	63.0
97	.077 .406	08.8	14.2	20.5	27.3	33.6	40.2	46.8	52.8	60.0	62.5	-	-	-	-	62.9
99	.077 .406	07.9	15.5	22.5	28.9	36.0	41.5	47.8	53.5	58.8	62.9	-	-	-	-	63.0
101	.076 .404	07.2	14.1	20.6	27.2	33.1	39.2	45.4	50.7	56.5	-	-	-	-	-	62.0
103	.076 .403	08.5	15.5	22.2	28.8	35.2	41.6	48.0	53.4	59.3	-	-	-	-	-	63.5
110	.078 .401	08.1	15.2	22.0	28.2	34.5	40.6	46.5	52.3	57.0	-	-	-	-	-	58.2
115	.086 .483	08.4	13.0	18.9	24.8	30.6	36.5	42.4	47.6	52.3	-	-	-	-	-	53.1
116	.086 .406	06.9	12.8	18.5	25.0	30.4	36.8	42.3	47.8	53.5	-	-	-	-	-	56.5
AVERAGE STRESS		7.2	14.3	20.7	27.1	33.3	39.5	46.5	51.0	56.5	-	-	-	-	-	59.8
STANDARD DEVIATION STRESS		1.02	1.04	1.33	1.56	2.00	2.02	2.24	2.36	2.72	-	-	-	-	-	3.81
AVERAGE STRESS-3σ		4.1	11.2	16.7	22.4	27.3	33.4	38.8	44.0	48.3	-	-	-	-	-	48.4

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
- (C) CURVE EXCEEDED THE GRAPH PAPER
- (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
- (I) CURVE IDEALIZED

TABLE - AI-16 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.		NOMINAL PER PLY THICKNESS			
S/N 8, S/N 12	TENSION	90°	400° F FOR 100 HRS.								400° F FOR 30 MIN				28.0%		.0078			
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI														MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²	
			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028				.030
S/N 8 - 28	.079	.466	08.0	11.3	16.4	21.0	26.0	28.7	-	-	-	-	-	-	-	-	-	29.5	.0128	.0391
41	.082	.466	06.9	11.6	17.3	22.4	27.3	32.2	-	-	-	-	-	-	-	-	-	36.6	.0139	.0406
42	.077	.462	08.3	12.7	18.5	23.8	29.0	34.4	-	-	-	-	-	-	-	-	-	37.9	.0138	.0379
43	.077	.463	08.3	12.2	17.9	23.2	28.4	33.7	37.9	-	-	-	-	-	-	-	-	38.6	.0144	.0390
44	.077	.463	08.8	13.1	18.7	24.0	29.0	34.2	-	-	-	-	-	-	-	-	-	36.8	.0131	.0360
46	.077	.466	08.8	12.9	18.7	24.2	29.4	34.7	-	-	-	-	-	-	-	-	-	38.4	.0136	.0381
53	.076	.462	06.9	12.3	17.7	23.2	28.4	33.7	38.0	40.7	-	-	-	-	-	-	-	42.4	.0168	.0374
32	.079	.491	06.2	11.6	16.9	21.4	26.8	28.4	-	-	-	-	-	-	-	-	-	30.5	.0124	.0368
40	.078	.497	06.2	11.6	16.6	21.2	26.0	30.7	34.0	-	-	-	-	-	-	-	-	34.4	.0142	.0368
51	.076	.494	07.6	14.1	19.8	25.4	31.1	36.2	41.1	44.0	-	-	-	-	-	-	-	44.8	.0164	.0370
AVERAGE STRESS			DATA CONTINUED ON NEXT PAGE																	
STANDARD DEVIATION STRESS																				
AVERAGE STRESS-3σ																				

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-16 REDUCED TEST DATA

[illegible]

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AI-17 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSIONETER SLIPPAGE

(II) CURVE IDEALIZED

TABLE - AI-19 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS
S/N9, S/N13	COMPRESSION	0°	1 Hr @ -65°F	-65°F For 30 Min	26.0%	.0082/ply x 3.4
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾					
S/N9 210	.080 .750	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
221	.077 .750	.003 .005 .007 .009 .011 .013 .015 .017 .019 .021 .023 .025 .027 .029 .031				
224	.081 .750	.004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030				
231	.083 .750	.005 .007 .009 .011 .013 .015 .017 .019 .021 .023 .025 .027 .029 .031				
236	.086 .750	.006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030				
263	.081 .749	.007 .009 .011 .013 .015 .017 .019 .021 .023 .025 .027 .029 .031				
266	.081 .750	.008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030				
268	.080 .748	.009 .011 .013 .015 .017 .019 .021 .023 .025 .027 .029 .031				
287	.081 .748	.010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030				
289	.082 .749	.011 .013 .015 .017 .019 .021 .023 .025 .027 .029 .031				
AVERAGE STRESS						
STANDARD DEVIATION STRESS						
AVERAGE STRESS-3σ						

FOOTNOTES: (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AI-19 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS														
S/NB, S/N13	COMPRESSION	0°	1Hr @ -65°F	-65°F For 30 Min	26.0%	.0082/ply x 3/4														
STRAIN IN./IN.		.002	.004	.006	.008		.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN.²
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																		
S/N13 210	.083 .750	(1) 13.0	26.0	39.2	52.0	59.0	64.9	-	-	-	-	-	-	-	-	-	-	66.8	.0123	.0623
220	.078 .750	(1) 11.6	(1) 18.8	(1) 26.4	(1) 34.2	(1) 43.1	51.6	-	-	-	-	-	-	-	-	-	-	58.0	(1) .0134	.0685
223	.082 .750	11.6	22.0	30.8	39.2	47.7	56.0	64.5	-	-	-	-	-	-	-	-	-	58.0	.0148	.0615
237	.082 .749	11.6	22.5	32.6	42.0	51.0	58.7	-	-	-	-	-	-	-	-	-	-	61.5	.0128	.0614
253	.082 .749	(1) 07.8	(1) 16.0	(1) 24.5	(1) 33.0	(1) 41.1	(1) 54.1	(1) 67.1	(1) 80.0	-	-	-	-	-	-	-	-	80.5	(1) .0162	.0614
255	.082 .749	12.6	25.0	36.2	42.1	51.8	60.1	67.6	-	-	-	-	-	-	-	-	-	72.7	.0154	.0614
257	.082 .749	10.6	19.9	28.7	36.7	41.1	45.6	49.7	53.7	57.9	61.3	65.3	68.8	72.4	-	-	-	72.5	.0262	.0614
267	.084 .750	10.6	20.6	31.8	42.8	53.1	59.2	64.3	69.0	74.0	-	-	-	-	-	-	-	77.5	.0199	.0630
270	.082 .749	13.0	26.0	37.5	46.8	52.5	56.2	61.0	65.2	69.0	76.3	79.8	83.5	86.4	-	-	-	87.0	.0286	.0614
275	.083 .750	09.6	20.9	34.2	43.3	52.4	60.3	68.2	-	-	-	-	-	-	-	-	-	76.1	.0158	.0623
AVERAGE STRESS		10.2	20.1	30.0	39.7	47.9	56.3											73.2	.0170	
STANDARD DEVIATION STRESS		1.73	3.16	4.38	4.66	5.28	5.52											6.83	.00419	
AVERAGE STRESS-3σ		5.0	10.6	16.9	22.7	32.1	39.7											52.7	.0046	

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
(C) CURVE EXCEEDED THE GRAPH PAPER
(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
(I) CURVE IDEALIZED

TABLE - AI-20 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/NB	COMPRESSION	90°				1 Hr @ -66°F				-66°F For 30 Min				26.0%				.0078			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030					
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
192	.075 .750	10.6	27.4	40.8	53.9	66.6	-										70.6	.0108		.0563	
193	.076 .750	10.5	22.8	32.1	41.0	50.0	59.4	66.0	-								63.9	.0142		.0570	
196	.077 .750	12.6	23.0	32.2	40.7	48.7	56.7	64.1	-								65.6	.0144		.0577	
197	.079 .749	11.4	20.3	28.7	36.5	44.8	58.4	59.5	-								65.0	.0158		.0592	
200	.079 .750	08.4	17.7	26.2	35.4	44.7	52.4	59.0	-								61.4	.0149		.0593	
201	.082 .751	11.4	22.3	30.9	38.2	46.6	53.5	61.0	-								61.3	.0142		.0615	
203	.078 .749	08.5	17.8	27.7	37.1	46.2	54.6	-									58.6	.0130		.0586	
206	.078 .748	10.3	19.7	29.2	37.7	46.9	54.6	61.7	-								65.5	.0154		.0584	
X17	.076 .750	10.5	21.1	31.8	40.4	49.1	57.2	-									63.5	.0136		.0570	
X19	.077 .749	12.3	23.4	33.8	42.5	51.2	59.1	-									63.3	.0139		.0576	
AVERAGE STRESS		10.6	21.6	31.3	40.3	49.3	-										64.2	.0140			
STANDARD DEVIATION STRESS		1.40	2.90	4.06	5.28	6.50											3.19	.00139			
AVERAGE STRESS-3σ		6.4	12.3	19.1	24.5	29.8											54.6	.0099			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-21 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING					TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N 8	COMPRESSION	0°		95% RH @ 125°F For 42 Days					-65°F For 30 Min				26.0%				.0078				
SPEC NO	STRAIN IN./IN.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI														MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²	
				.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028				.030
175		.003	.750	10.0	19.9	30.0	40.2	50.0	55.1	59.7	64.3	68.2	72.5	76.3	—				77.8	.0232	.0623
178		.079	.751	17.6	21.4	32.2	43.3	53.0	62.4	70.8	—								71.0	.0142	.0594
182		.077	.751	08.8	19.1	28.2	37.6	46.7	55.4	64.0	—								67.3	.0151	.0578
185		.076	.750	09.5	19.8	31.2	42.1	51.5	61.0	68.7	—								71.0	.0149	.0570
189		.077	.749	10.4	20.8	31.0	40.6	49.5	58.5	67.3	—								70.8	.0150	.0576
X1		.076	.749	(1) 09.7	18.8	28.3	37.8	46.9	55.5	64.1	—								72.3	.0152	.0569
X3		.075	.750	(1) 09.8	20.1	30.0	40.7	48.8	58.0	66.6	74.5	—							78.6	.0174	.0563
X6		.076	.751	09.7	19.9	31.0	41.1	49.9	58.6	67.2	75.3	—							80.4	.0174	.0571
X9		.076	.751	09.6	20.2	29.8	39.4	49.0	57.3	65.5	73.6	81.8	—						81.5	.0183	.0571
X13		.076	.751	09.7	20.2	31.2	40.3	50.3	59.4	67.5	—								69.1	.0141	.0571
AVERAGE STRESS				9.8	20.0	30.3	40.3	49.6	58.1	66.1									74.0	.0166	
STANDARD DEVIATION STRESS				.49	.75	1.21	1.75	1.90	2.42	3.04									5.02	.00277	
AVERAGE STRESS-3σ				8.3	17.8	26.7	36.1	43.9	50.8	57.0									58.9	.0083	

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-22 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS					
S/N 8	COMPRESSION	90°				95% RH @ 125°F For 42 Days				-65°F For 30 Min				26.0%				.0080			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²		
SPEC NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
2	.077 .749	09.2	19.2	28.6	37.4	48.5	—										52.6	.0104	.0576		
4	.078 .750	07.7	15.4	22.6	27.7	33.4	37.8	42.0	46.1	50.3	—						52.8	.0198	.0586		
17	.078 .749	06.8	14.4	21.8	29.1	36.4	44.5	—									48.5	.0130	.0584		
14	.084 .749	06.5	12.7	19.6	24.5	27.7	38.2	46.8	—								53.3	.0158	.0625		
26	.084 .749	06.7	13.2	19.6	26.4	33.0	39.6	46.1	52.5	—							55.6	.0170	.0629		
31	.081 .750	08.7	16.4	25.0	33.5	41.5	49.9	—									54.8	.0130	.0603		
33	.080 .748	07.2	14.4	21.2	30.1	39.2	47.5	57.7	—								59.1	.0144	.0598		
37	.081 .749	09.1	18.8	28.8	38.6	46.7	56.0	—									57.3	.0123	.0606		
47	.079 .749	09.1	16.9	25.5	33.5	43.1	50.7	57.7	—								59.0	.0143	.0592		
50	.079 .749	09.1	19.3	34.4	48.8	56.8	63.9	—									65.0	.0173	.0692		
AVERAGE STRESS		8.0	16.1	24.7	33.0	40.6											55.8	.0142			
STANDARD DEVIATION STRESS		.39	.71	1.51	7.27	8.6											4.4	.00273			
AVERAGE STRESS-3σ		7.8	14.0	20.2	11.2	14.8											42.6	.0080			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-26 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/NB	COMPRESSION	0°				96% RH @ 125°F For 42 Days				RT				23.0%				.0077			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
176	.082 .761	07.3	15.9	28.9	45.0	—											50.2	.0089	.0615		
179	.078 .760	10.6	23.2	37.2	50.3	—											57.3	.0086	.0585		
180	.077 .760	14.7	30.2	44.0	56.4	—											66.1	.0086	.0576		
186	.077 .760	09.0	18.8	28.2	37.0	46.3	54.0	—									57.1	.0123	.0576		
187	.077 .760	08.5	18.1	27.3	36.4	44.7	53.0	—									59.8	.0139	.0576		
191	.078 .748	11.6	25.2	36.2	46.3	53.8	—										54.1	.0104	.0580		
X4	.076 .760	13.5	20.8	31.6	41.2	49.5	57.9	—									57.9	.0126	.0570		
X7	.077 .751	10.8	22.1	32.0	41.5	49.6	—										56.8	.0118	.0579		
X10	.076 .748	10.7	21.6	34.1	46.5	57.5	—										58.9	.0106	.0568		
X14	.076 .752	10.7	24.0	34.1	46.7	54.0	—										54.8	.0106	.0571		
AVERAGE STRESS		10.4	22.0	33.3	44.5												57.3	.0109			
STANDARD DEVIATION STRESS		1.96	4.04	4.98	6.26												4.0	.00170			
AVERAGE STRESS-3σ		4.5	9.9	16.4	26.7												41.3	.0068			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-26 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/NB	COMPRESSION	90°				95% RH @ 125°F For 42 Days				RT				26.0%				.0078			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
22	.084 .749	08.2	16.4	24.5	31.2	34.5	35.2	38.8	40.6	42.5	44.1	45.8	—				47.0	.0235	.0629		
36	.081 .749	09.5	18.8	27.1	34.4	41.5	47.4	—									50.0	.0128	.0810		
44	.080 .750	08.6	18.0	26.6	34.2	42.0	47.0	—									43.8	.0122	.0800		
88	.076 .749	13.8	24.8	34.2	42.8	—											46.3	.0089	.0567		
90	.076 .750	10.2	21.0	30.3	38.5	—											44.2	.0084	.0570		
96	.076 .750	08.4	17.9	26.3	35.0	42.6	—										48.5	.0117	.0570		
98	.077 .751	10.5	19.2	28.2	37.4	45.8	—										48.0	.0106	.0579		
100	.076 .751	09.5	19.3	28.8	37.6	46.1	—										47.0	.0106	.0571		
101	.077 .750	09.0	17.3	25.2	33.1	41.4	47.5	—									49.3	.0135	.0578		
103	.076 .751	09.0	18.9	27.6	36.3	43.0	49.9	—									50.6	.0123	.0571		
AVERAGE STRESS		9.7	19.2	27.9	36.0												47.5	.0126			
STANDARD DEVIATION STRESS		1.63	2.37	2.79	3.25												2.22	.00413			
AVERAGE STRESS-3σ		4.8	12.1	19.5	26.2												40.7	.0002			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-27 REDUCED TEST DATA

PANEL NO.	TYPE TEST		TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS					
S/N8-S/N13	COMPRESSION		0°				None				160°F For 30 Min				26.0%				.0079					
STRAIN IN./IN.			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS	AREA IN. 2			
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																					
S/N8- 70	.077	.751	08.5	17.1	24.9	32.3	42.0	—										46.4	.0120	.0579				
76	.077	.750	09.2	17.6	25.4	33.8	41.5	47.4	—									49.6	.0130	.0578				
77	.076	.751	09.8	20.0	29.0	37.8	—											40.6	.0085	.0571				
78	.076	.749	09.3	19.2	28.8	38.5	—											44.6	.0093	.0569				
79	.076	.749	08.4	17.4	24.2	34.4	42.8	—										48.2	.0102	.0569				
80	.076	.749	08.8	17.9	27.4	36.8	44.8	52.4	—									52.8	.0122	.0569				
81	.076	.749	10.0	19.5	30.1	43.2	—											50.0	.0092	.0569				
82	.076	.749	08.4	17.6	26.9	36.7	46.5	—										47.0	.0102	.0569				
83	.077	.751	09.3	18.3	26.4	34.8	46.1	—										49.3	.0107	.0579				
84	.076	.752	07.9	15.8	24.2	33.6	43.1	—										47.2	.0106	.0571				
AVERAGE STRESS									DATA CONTINUED ON NEXT PAGE															
STANDARD DEVIATION STRESS																								
AVERAGE STRESS-3σ																								

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - A1-27 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS						
S/N8.S/N13	COMPRESSION	0°				None				160°F For 30 Min				26.0%				.0079						
SPEC NO	STRAIN IN./IN.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																		MAX STRESS	STRAIN AT MAX STRESS	AREA $\frac{1}{2}$ IN.
		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030								
S/N13-221		.079	.750	08.1	15.9	24.0	32.1	40.5	—											51.0	.0118	.0593		
224		.079	.750	08.0	15.7	24.3	32.4	40.2	48.5	—										55.8	.0139	.0593		
233		.084	.750	07.9	16.2	27.0	40.8	—												50.0	.0066	.0630		
236		.085	.750	07.9	14.6	22.6	31.1	37.7	42.4	46.7	—									48.3	.0152	.0637		
236		.084	.750	08.1	15.7	23.4	31.1	38.9	46.7	52.6	—									54.9	.0146	.0630		
241		.080	.749	09.2	21.0	35.0	—													46.5	.0075	.0599		
244		.079	.750	08.1	20.2	32.4	44.0	—												52.2	.0088	.0593		
258		.081	.750	08.6	16.8	23.9	31.6	39.4	46.5	—										48.1	.0131	.0607		
266		.085	.750	08.6	20.2	30.6	41.2	—												48.0	.0084	.0637		
268		.084	.750	07.6	15.9	22.2	30.2	37.6	43.8	—										48.4	.0130	.0630		
AVERAGE STRESS				8.6	17.6	26.7														48.9	.0112			
STANDARD DEVIATION STRESS				.68	1.29	3.44														3.5	.00153			
AVERAGE STRESS-90°				6.6	11.9	16.4														38.4	.0066			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - A1-28 REDUCED TEST DATA

[illegible]

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRE'S REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AI-28 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 8, S/N 13	COMPRESSION	90°			NONE				160°F FOR 30 MIN				26.0%				.0082			
STRAIN IN / IN		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²	
SPEC. NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																		
S/N13-211	.078 .748	09.8	18.2	26.4	36.0	—											43.3	.0099	.0683	
214	.080 .752	09.0	19.9	29.4	40.3	—											44.5	.0786	.0602	
217	.081 .750	12.2	21.8	30.0	—												42.7	.0060	.0607	
246	.080 .752	09.0	17.9	32.9	—												36.7	.0064	.0602	
249	.081 .750	07.4	14.3	20.7	27.1	36.1	—										42.2	.0107	.0607	
250	.081 .752	07.7	16.8	22.8	28.6	36.0	41.1	—									42.5	.0125	.0609	
252	.082 .750	07.6	16.6	22.6	29.3	36.8	39.8	—									42.5	.0134 (1)	.0615	
257	.081 .750	08.9	16.8	24.4	32.0	39.5	—										44.5	.0106	.0607	
269	.083 .750	08.4	16.7	25.2	33.7	41.1	—										46.4	.0114	.0623	
264	.084 .750	08.6	16.5	24.2	31.7	39.2	—										46.5	.0118	.0630	
AVERAGE STRESS		07.8	15.6	23.2													42.0	.0114		
STANDARD DEVIATION STRESS		1.47	2.61	4.04													2.64	.00231		
AVERAGE STRESS-3σ		3.4	7.8	11.1													36.1	.0046		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AI-20 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING						TEST COND.						RESIN CONT.						NOMINAL PER PLY THICKNESS			
S/N8	COMPRESSION	0°	95% RH @ 125°F For 42 Days						160°F For 10 Min						26.0%									
STRAIN - IN./IN.			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2				
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																					
53	.077	.749	12.5	22.6	32.2	40.7	—											46.3	.0096	.0676				
174	.076	.750	10.0	22.8	33.9	45.3	—											47.3	.0086	.0670				
177	.080	.749	13.0	25.2	33.4	—												37.6	.0070	.0699				
181	.078	.749	13.3	23.6	32.3	41.7	—											42.3	.0083	.0685				
184	.078	.750	15.3	32.3	40.5	—												47.3	.0072	.0685				
188	.078	.750	09.2	17.6	26.1	33.8	41.7	—										44.4	.0110	.0686				
X2	.075	.750	10.7	20.3	29.6	38.4	—											45.4	.0098	.0663				
X5	.077	.749	17.8	32.6	45.1	—												48.7	.0062	.0677				
X8	.076	.750	18.4	29.5	36.8	41.5	—											42.3	.0086	.0670				
X11	.077	.750	22.0	36.7	41.1	45.0	—											45.4	.0082	.0673				
AVERAGE STRESS			14.2	26.3	36.0													44.7	.0084					
STANDARD DEVIATION STRESS			4.11	6.22	7.00													3.25	.00143					
AVERAGE STRESS-3σ			1.9	7.7	14.0													34.9	.0041					

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-30 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/NB	COMPRESSION	90°	95% RH @ 125°F For 42 Days								160°F For 10 Min				26.0%				.0082			
STRAIN IN /IN.		STRESS - KSI																				
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
10	.084	.749	09.6	17.2	23.9	29.9	35.8	—										36.2	.0104	.0629		
12	.084	.750	06.7	14.3	20.2	26.6	34.0	38.0	—									40.2	.0134	.0630		
18	.084	.749	04.0	08.3	12.9	18.1	22.6	28.3	34.0	—								38.3	.0160	.0629		
21	.084	.749	07.0	12.7	19.6	26.8	33.4	39.2	—									41.5	.0130	.0628		
24	.084	.750	07.6	15.3	22.8	29.6	36.2	40.6	—									41.3	.0123	.0630		
27	.084	.749	05.2	11.9	19.1	25.5	31.8	37.7	—									39.4	.0130	.0629		
34	.080	.750	07.3	14.0	22.3	31.0	38.7	—										39.8	.0107	.0600		
38	.080	.749	08.3	17.3	24.0	30.0	37.0	42.5	—									43.2	.0124	.0600		
39	.080	.749	08.7	17.5	25.6	33.6	40.0	—										40.7	.0102	.0600		
49	.079	.749	07.4	15.2	23.0	30.4	37.8	—										40.3	.0109	.0632		
AVERAGE STRESS			07.2	14.4	21.3	28.2	34.6											40.1	.0122			
STANDARD DEVIATION STRESS			1.63	2.86	3.63	4.26	4.86											1.90	.00177			
AVERAGE STRESS-3σ			2.3	5.8	10.4	15.4	20.0											14.4	.0070			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM VERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
CURVE IDEALIZED

TABLE -AI-31 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AI-33 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS						
S/N8,S/N13	COMPRESSION	0°	100Hrs@400°F	400°F For 30 Mins				26.0%				.0082						
STRAIN - IN./IN.																		
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI											MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
S/N 9 - 209	.080	.750	10.0	19.0	27.5	-								28.5	.0082	.0600		
219	.077	.749	08.9	18.3	26.3	-								33.8	.0078	.0575		
223	.083	.750	07.2	14.5	22.3	29.7	-							35.0	.0095	.0622		
227	.077	.750	08.7	18.0	25.7	-								31.2	.0075	.0576		
233	.082	.750	07.7	16.2	21.4	27.1	-							30.2	.0093	.0615		
236	.084	.749	07.0	14.4	20.6	26.8	-							30.9	.0095	.0628		
242	.082	.750	08.0	17.8	22.4	27.7	-							27.8	.0081	.0615		
255	.081	.749	07.6	15.4	22.5	-								27.4	.0079	.0605		
265	.083	.749	07.6	15.0	22.2	-								26.4	.0080	.0620		
275	.084	.751	07.1	16.7	26.2	-								27.4	.0066	.0631		
AVERAGE STRESS							DATA CONTINUED ON NEXT PAGE											
STANDARD DEVIATION STRESS																		
AVERAGE STRESS-3σ																		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-33 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS														
S/N 9, S/N 13	COMPRESSION	0°	100 HRS @ 400°F	400°F FOR 30 MINS	26.0%	.0082														
STRAIN IN./IN.																				
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI										MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²					
S/N13-209	.080	.750	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	27.4	.0077	.0600
219	.079	.751	.008	.016	.024	—												26.8	.0072	.0600
227	.080	.750	.068	.136	.204	.272	—											30.8	.0080	.0600
231	.083	.749	(1) .080	(1) .160	(1) .240	(1) .320	—											31.6	(1) .0084	.0620
234	.086	.750	.075	.150	.210	—												26.4	.0077	.0645
243	.078	.750	.105	.210	.277	—												30.4	.0067	.0586
254	.083	.750	.097	.194	.270	—												31.9	.0070	.0621
260	.084	.749	7.2	14.3	21.4	29.2	—											33.6	.0083	.0629
266	.084	.750	(1) 12.4	(1) 16.7	(1) 22.4	(1) 27.7	—											32.7	(1) .0086	.0630
276	.043	.749	.073	.145	.218	—												25.0	.0068	.0620
AVERAGE STRESS			8.4	16.4	23.4													28.8	.0079	.0620
STANDARD DEVIATION STRESS			1.44	1.86	2.39													3.03	.00031	
AVERAGE STRESS-30°			4.1	11.0	16.5													19.7	.0070	

FOOTNOTES: (1) TO NEAREST .001"
(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
(C) CURVE EXCEEDED THE GRAPH PAPER
(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
(I) CURVE IDEALIZED

TABLE - AI-34 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING					TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS				
S/N8	COMPRESSION	90°	100 Hrs @ 400°F					400°F For 30 Min					26.0%									
STRAIN · IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN.²			
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS · KSI																				
3	.077 .748	04.9	11.1	—													17.2	.0060	.0676			
6	.075 .750	12.6	—														18.9	.0034	.0683			
8	.084 .750	06.1	15.1	—													18.9	.0063	.0630			
11	.084 .750	05.5	11.4	17.3	—												19.1	.0067	.0630			
16	.083 .750	05.8	11.6	17.7	—												19.3	.0066	.0623			
19	.083 .748	04.4	09.8	15.1	—												18.5	.0076	.0621			
25	.083 .750	04.2	06.2	09.7	13.5	15.9	19.1	—									19.2	.0138	.0623			
30	.083 .750	05.5	10.2	14.9	18.7	—											19.3	.0084	.0623			
40	.081 .751	04.9	10.8	15.5	—												19.7	.0069	.0609			
43	.080 .749	07.3	11.8	—													18.9	.0060	.0599			
AVERAGE STRESS		04.9															18.9	.0071				
STANDARD DEVIATION STRESS		3.1															.69	.00272				
AVERAGE STRESS-3σ																	16.8					

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-36 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS		
S/N8, S/N9	COMPRESSION	0°	100 HRS. @ 450°F										450°F For 30 Min.					26.0%					.0078		
STRAIN IN/IN.		STRESS - KSI																							
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN.²					
S/N8 - 55	.077	.750	07.7	-														15.3	.0040	.0577					
56	.086	.749	10.0	-														12.5	.0027	.0562					
S/N9 - 266	.080	.749	07.9	11.2	12.9	A												20.0	A	.0599					
268	.080	.750	08.4	-														12.3	.0030	.0600					
270	.081	.749	09.2	-														13.2	.0040	.0606					

TABLE - AI-37 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING						TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS								
S/N 9, S/N 13	PANEL SHEAR	0/90	NONE						65° F FOR 30 MIN.	26.0%	.0080								
STRAIN IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	STRESS - KSI				.060					
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾														MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²	
S/N 9 - 9	.078	3.875	08.5	13.7	16.1	A	-								19.3	A	0.302		
12	.080	3.875	08.2	14.3	16.7	A	-								19.9	A	0.310		
13	.079	3.875	08.3	13.9	16.2	17.0	A	-							18.7	A	0.306		
15	.077	3.875	08.3	15.4	16.1	A	-								16.1	A	0.298		
40	.080	3.875	08.7	15.1	18.4	19.6	A	-							20.5	A	0.310		
34	.082	3.875	08.0	14.2	18.1	20.4	21.6	22.5	A						24.2	A	0.318		
18	.077	3.875	09.1	15.0	17.5	18.6	19.1	19.4	19.5	19.6	19.8				20.0	0.396	0.298		
20	.078	3.875	08.7	15.2	17.6	18.5	19.0	19.2	19.3	19.4	19.7	19.9	19.8	19.9	19.9	19.9	0.302		
22	.083	3.875	07.2	12.9	16.2	17.6	18.5	19.0	19.4	19.5	19.7	19.9	.044 TO .076 - STRAIN 20.0 TO 20.9 - STRESS			20.9	.0816	0.322	
29	.083	3.875	07.4	12.9	15.9	17.3	17.9	18.1	18.3	18.4	18.6	18.7	18.8	18.9	19.0	19.1	.0624	0.322	
AVERAGE APPARENT STRESS			DATA CONTINUED ON NEXT PAGE																
STANDARD DEVIATION APPARENT STRESS																			
AVERAGE APPARENT STRESS -3σ																			
*(.08) x (AVERAGE APPARENT STRESS)																			
*(.08) x (AVERAGE APPARENT STRESS - 3σ)																			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AI-37 REDUCED TEST DATA

DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 9, S/N 13	PANEL SHEAR	0/90				NONE				-65°F FOR 30 MIN				26.0%				.0080			
STRAIN - IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
S/N 13 - 19	.079 3.875	07.8	14.0	16.2	A	-	-	-	-	-	-	-	-	-	-	-	17.3	A	.308		
31	.079 3.875	07.0	13.2	16.2	17.4	A	-	-	-	-	-	-	-	-	-	-	17.9	A	.308		
30	.080 3.875	07.3	12.4	16.2	18.6	20.4	A	-	-	-	-	-	-	-	-	-	25.4	A	.310		
24	.083 3.875	07.5	13.4	17.2	19.1	20.2	20.6	-	-	-	-	-	-	-	-	-	21.1	.0272	.322		
33	.084 3.875	08.2	13.8	17.1	19.0	20.2	-	-	-	-	-	-	-	-	-	-	20.8	.0232	.326		
38	.084 3.875	06.5	11.7	14.6	16.4	17.3	17.9	18.2	18.4	18.5	-	-	-	-	-	-	18.6	.0400	.326		
			</																		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AI-38 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 9, S/N 13	PANEL SHEAR	0/90				NONE				25° F FOR 30 MIN.				.06.0%				.0080			
STRAIN IN./IN.																					
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2	
STRESS - KSI																					
S/N 9 - 17	.082	3.875	07.1	11.0	14.1	15.1	15.6											15.7	.0204	.318	
19	.078	3.875	07.2	11.5	13.8	14.9	15.4	15.7	15.9	16.1	16.3	16.5						16.6	.0560	.0302	
21	.083	3.875	04.8	09.9	14.2	15.4	16.5	-										16.5	.0204	.322	
26	.082	3.875	06.9	11.6	14.0	14.8	16.3	15.7	15.9	16.0	16.0	16.0	16.2	16.2	16.3	16.3	16.3	16.4	.0648	.318	
36	.082	3.875	07.3	13.1	16.2	17.7	18.4	18.9	19.2	-								19.3	.0294	.318	
S/N 13 - 12	.079	3.875	07.5	12.6	14.7	15.5	16.0	-										17.2	.0600	.306	
13	.079	3.875	07.7	12.7	14.4	15.1	15.4	15.7	16.0	-								17.2	.0442	.306	
20	.079	3.875	07.6	12.7	14.3	15.0	15.6	-										16.0	.0320	.306	
22	.082	3.875	06.5	13.1	14.7	15.9	16.4	-										16.4	.0200	.318	
7	.074	3.875	07.4	12.6	16.2	17.8	18.4	18.7	18.9	-								19.0	.0292	.297	
AVERAGE APPARENT STRESS			7.2	12.1	14.3	15.7	16.3											17.0	.0397		
STANDARD DEVIATION APPARENT STRESS			.96	1.06	.96	1.12	1.18											1.24			
AVERAGE APPARENT STRESS - 3σ			4.4	9.0	11.4	12.3	12.8											13.3			
*(.88) x (AVERAGE APPARENT STRESS)			6.3	10.6	12.6	13.8	14.3											16.0			
*(.88) x (AVERAGE APPARENT STRESS - 3σ)			3.5	7.8	10.0	10.8	11.3											11.7			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AI-39 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS													
S/N 5, S/N 8 S/N 13, S/N 9	PANEL SHEAR	0/90	NONE	RT	26.0%	.0082													
STRAIN - IN./IN.																			
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI													MAX STRESS	STRAIN AT MAX STRESS	AREA $\frac{IN.^2}{2}$	
S/N 13 - 15	.079	3.875	07.2	11.8	14.1	A	-									16.5	A	.306	
23	.085	3.875	06.6	11.0	12.7	A	-									14.1	A	.328	
26	.082	3.875	06.8	11.4	14.4	A	-									18.7	A	.318	
27	.081	2.875	07.5	11.9	13.6	A	-									14.2	A	.314	
10	.080	3.875	07.0	11.4	13.1	A	-									15.5	A	.310	
36	.083	3.875	07.3	12.3	14.9	A	-									17.1	A	.322	
37	.082	3.875	07.6	13.0	15.5	A	-									17.8	A	.318	
39	.084	3.875	06.4	10.5	13.0	A	-									16.0	A	.325	
17	.083	3.875	07.2	11.6	13.2	A	-									13.8	A	.322	
29	.082	3.875	06.9	11.3	A	-										14.1	A	.318	
AVERAGE APPARENT STRESS			DATA CONTINUED ON NEXT PAGE																
STANDARD DEVIATION APPARENT STRESS																			
AVERAGE APPARENT STRESS - 3σ																			
*(.88) x (AVERAGE APPARENT STRESS)																			
*(.88) x (AVERAGE APPARENT STRESS - 3 σ)																			

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AI-39 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 5, S/N 8 S/N 13, S/N 9	PANEL SHEAR	0/90				NONE				RT				26.0%				.0082			
STRAIN - IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA $\frac{1}{2}$ IN.		
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
S/N 5 - 4	.067 3.875	06.2	10.6	12.8	13.5	-											14.0	.0218	0.260		
7	.062 3.875	08.1	12.2	13.4	14.0	14.2	14.3	14.4	-								14.5	.0308	0.240		
7A	.067 3.875	06.4	10.9	13.2	14.4	15.2	15.3	15.5	-								15.5	.0320	0.260		
8A	.066 3.875	06.6	11.7	13.6	14.6	15.2	15.5	15.8	-								15.9	.0298	0.256		
2	.066 3.875	07.9	12.3	13.8	14.6	14.9	-										15.1	.0214	0.256		
S/N 9 - 36	.062 3.875	06.4	11.4	14.1	15.6	16.7	17.2	17.5	-								18.0	.0300	0.318		
37	.084 3.875	07.7	12.6	15.2	16.3	-											17.4	.0172	0.326		
38	.080 3.875	06.6	12.5	14.4	15.3	15.5	-										15.5	.0200	0.310		
39	.082 3.875	06.6	11.0	12.9	14.4	15.0	-										15.3	.0240	0.318		
S/N 8 - 7	.078 3.875	06.8	12.1	15.6	17.4	18.6	-										19.2	.0250	0.306		
AVERAGE APPARENT STRESS		06.9	11.7	13.9	15.0												16.0	.0252			
STANDARD DEVIATION APPARENT STRESS		0.52	0.69	0.90	1.16												1.64	.00516			
AVERAGE APPARENT STRESS - 3 σ		4.3	9.6	11.2	11.5												11.1	.0087			
*(.88) x (AVERAGE APPARENT STRESS)		5.5	10.3	12.2	13.2												14.1	.972			
*(.88) x (AVERAGE APPARENT STRESS - 3 σ)		3.7	8.4	9.9	10.1												9.7	.972			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AI-40 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS						
S/N 9, S/N 13	PANEL SHEAR	0/90	NONE								160° F FOR 30 MIN.	26.0%	.0081						
STRAIN IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
S/N 13 - 9	.080 3.875	05.9	09.5	11.2	A												13.2	A	.310
21	.083 3.875	06.4	08.8	10.9	A												15.0	A	.322
24	.083 3.875	05.2	03.7	10.5	12.2	A											14.4	A	.322
25	.063 3.875	06.4	08.8	10.8	A												14.4	A	.322
16	.030 3.875	05.9	09.5	10.7	A												12.7	A	.310
40	.034 3.875	05.1	08.5	10.7	A												13.6	A	.325
41	.032 3.875	05.5	09.0	11.1	A												13.9	A	.318
42	.082 3.875	05.4	09.0	11.2	12.5	A											13.9	A	.318
14	.080 3.875	05.7	09.3	10.6	A												12.8	A	.310
18	.080 3.875	06.0	09.3	10.5	A												12.7	A	.310
AVERAGE APPARENT STRESS		DATA CONTINUED ON NEXT PAGE																	
STANDARD DEVIATION APPARENT STRESS																			
AVERAGE APPARENT STRESS - 3σ																			
• .88 x AVERAGE																			
• .88 x 3 σ																			

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - A1-40 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 9, S/N 13	PANEL SHEAR	0/90	NONE				160°F FOR 30 MIN				26.0%				.0081			
STRAIN IN./IN.			.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	
SPEC. NO.	T(1)	1/1	STRESS - KSI															
S/N 9 - 31	.081	3.875	05.4	08.8	10.5	11.4	12.1	A										12.7
32	.081	3.875	06.2	10.1	12.5	A												16.1
41	.080	3.875	05.3	08.7	10.7	11.9	12.7	12.9	13.2	A								13.8
42	.081	3.875	05.9	09.4	11.4	A												12.6
10	.080	3.875	05.7	08.9	10.5	11.4	11.9	A										12.6
16	.077	3.875	05.6	09.1	11.0	11.9	12.6	12.9	A									13.1
27	.081	3.875	05.2	08.4	10.2	11.1	11.8	12.1	A									12.5
28	.082	3.875	05.0	07.9	09.5	10.4	11.0	A										12.9
30	.081	3.875	05.0	08.5	10.4	11.6	12.3	A										12.8
33	.082	3.875	05.6	10.2	12.4	C												15.4
AVERAGE APPARENT STRESS			5.5	9.0	11.91	11.44	12.1	12.6										13.4
STANDARD DEVIATION APPARENT STRESS			.35	.56	.68	.66												1.28
AVERAGE APPARENT STRESS - 3σ			4.4	7.3	8.9	9.1												9.6
* .88 x AVERAGE			4.8	7.9	9.6	10.1	10.6	11.1										11.8
* .88 x 3 σ			3.9	6.4	7.8	8.8												8.6

FOOTNOTES: (1) TO NEAREST .001"
(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
(C) CURVE EXCEEDED THE GRAPH PAPER
(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
(I) CURVE IDEALIZED
• THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE AI-41 POISSONS RATIO FROM TENSION TESTS

DATE: 11-17-68

MATERIAL IDENTIFICATION:

PANEL	RESIN CONT.	FILA. ORIENT.
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	0	0
31	0	0
32	0	0
33	0	0
34	0	0
35	0	0
36	0	0
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	0	0
45	0	0
46	0	0
47	0	0
48	0	0
49	0	0
50	0	0
51	0	0
52	0	0
53	0	0
54	0	0
55	0	0
56	0	0
57	0	0
58	0	0
59	0	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	0	0
66	0	0
67	0	0
68	0	0
69	0	0
70	0	0
71	0	0
72	0	0
73	0	0
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	0	0
80	0	0
81	0	0
82	0	0
83	0	0
84	0	0
85	0	0
86	0	0
87	0	0
88	0	0
89	0	0
90	0	0
91	0	0
92	0	0
93	0	0
94	0	0
95	0	0
96	0	0
97	0	0
98	0	0
99	0	0
100	0	0

STRAIN GAGE FACTOR: 2.10/2.08
STRAIN GAGE RESISTANCE: 350 /120
EXTENSOMETER: S-400-2AB

PANEL	RESIN CONT.	FILA. ORIENT.
S/N8	26.0%	0°

[illegible]

STRAIN GAGE FACTOR: 2.10/2.08
STRAIN GAGE RESISTANCE: 350 /120
EXTENSOMETER: S-400-2AB

MATERIAL IDENTIFICATION:

RESIN CONT.

PANEL

10.

[illegible]

TABLE - AI-43 POISSONS RATIO FROM TENSION TESTS

DATE: 11-14-88

MATERIAL IDENTIFICATION:

STRAIN GAGE FACTOR: 2.10
STRAIN GAGE RESISTANCE: 360
EXTENSOMETER: S-400-2AB

PANEL	RESIN CONT.	FILA. ORIENT.
1	100	100
2	100	100
3	100	100
4	100	100
5	100	100
6	100	100
7	100	100
8	100	100
9	100	100
10	100	100
11	100	100
12	100	100
13	100	100
14	100	100
15	100	100
16	100	100
17	100	100
18	100	100
19	100	100
20	100	100
21	100	100
22	100	100
23	100	100
24	100	100
25	100	100
26	100	100
27	100	100
28	100	100
29	100	100
30	100	100
31	100	100
32	100	100
33	100	100
34	100	100
35	100	100
36	100	100
37	100	100
38	100	100
39	100	100
40	100	100
41	100	100
42	100	100
43	100	100
44	100	100
45	100	100
46	100	100
47	100	100
48	100	100
49	100	100
50	100	100
51	100	100
52	100	100
53	100	100
54	100	100
55	100	100
56	100	100
57	100	100
58	100	100
59	100	100
60	100	100
61	100	100
62	100	100
63	100	100
64	100	100
65	100	100
66	100	100
67	100	100
68	100	100
69	100	100
70	100	100
71	100	100
72	100	100
73	100	100
74	100	100
75	100	100
76	100	100
77	100	100
78	100	100
79	100	100
80	100	100
81	100	100
82	100	100
83	100	100
84	100	100
85	100	100
86	100	100
87	100	100
88	100	100
89	100	100
90	100	100
91	100	100
92	100	100
93	100	100
94	100	100
95	100	100
96	100	100
97	100	100
98	100	100
99	100	100
100	100	100

S/N/9 26.0% 90°

88

[illegible]

TABLE - AII-1 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 15	TENSION	0°	-65° F FOR 1 HR.								-65° F FOR 30 MIN.				31.0%				.0095			
STRAIN IN./IN.			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																			
S/N 15-1	.097	.496	08.1	16.6	21.2	27.0	32.2	38.5	43.9	49.5	54.7	60.3	66.0	71.5	77.0	-	-	81.0	.0276	.0481		
2	.095	.496	08.3	16.6	21.2	26.8	32.7	38.4	44.0	50.0	55.9	61.6	66.9	72.5	77.5	82.7	87.0	86.3	.0314	.0471		
4	.098	.496	08.2	15.6	20.4	26.7	30.9	36.8	42.2	47.7	53.5	58.6	63.8	69.0	74.0	79.2	-	81.6	.0290	.0486		
5	.095	.496	08.5	17.0	21.2	26.8	32.5	38.2	43.7	50.0	55.6	58.9	64.5	72.1	77.0	82.8	88.0	89.7	.0310	.0471		
6	.096	.496	09.4	18.6	23.2	28.9	35.2	42.3	49.3	56.1	63.1	70.0	76.4	82.3	88.0	94.7	-	94.3	.0290	.0426		
7	.097	.496	08.3	16.2	20.6	26.0	31.6	37.4	43.0	48.8	54.4	59.3	66.0	70.6	76.0	81.0	85.3	85.5	.0303	.0481		
8	.096	.496	07.2	15.0	19.9	24.6	30.4	36.0	41.5	46.8	52.5	57.8	62.7	68.0	73.5	78.0	-	81.2	.0293	.0486		
9	.097	.496	07.3	15.2	19.7	25.6	31.2	37.0	42.8	47.8	54.0	59.6	65.0	70.6	76.4	-	-	79.5	.0272	.0481		
59	.095	.493	07.5	16.0	20.8	26.3	32.0	38.5	43.8	49.6	55.6	61.0	66.4	72.5	77.5	83.2	-	87.0	.0300	.0468		
62	.094	.496	08.9	17.1	21.7	27.3	33.6	39.2	45.5	51.0	56.9	62.6	68.3	73.8	79.0	83.5	-	84.4	.0282	.0461		
AVERAGE STRESS			8.2	16.4	21.0	26.5	32.2	38.2	44.0	49.7	55.6	61.0	66.7	72.2	77.6	-	-	85.2	.0293			
STANDARD DEVIATION STRESS			.76	1.06	1.01	1.6	1.42	1.78	2.18	2.57	2.92	3.49	3.99	3.86	4.01	-	-	4.68	.00139			
AVERAGE STRESS-30°			5.9	13.2	18.0	23.0	27.9	33.0	37.5	42.0	46.8	50.5	54.0	60.6	66.6	-	-	71.2	.0261			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-2 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING						TEST COND.						RESIN CONT.		NOMINAL PER PLY THICKNESS	
S/N 11	TENSION	90°	-65° F FOR 1 HR.						-65° F FOR 30 MINS.						31.0%		.0088	
STRAIN IN./IN.			002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	
SPEC. NO	T(1)	W(1)	STRESS - KSI															
S/N 11 - 177	.085	.510	08.3	15.3	20.1	25.4	30.6	36.0	41.5	46.5	51.9	C						77.7
185	.086	.490	08.1	15.2	19.7	25.2	30.9	36.2	41.5	46.3	52.0	57.0	62.2	67.7	72.5			77.0
189	.089	.512	08.6	14.7	19.1	24.2	29.2	34.1	39.6	44.0	49.0	54.0	59.5	63.9	69.0			73.5
M-2	.088	.496	08.0	15.2	21.8	27.3	32.6	38.1	43.6	49.4	54.0	59.7	64.3					68.8
M-3	.090	.497	07.1	13.6	20.1	27.0	33.1	39.0	45.0	48.7	55.0	59.1	64.5					66.0
M-4	.089	.496	06.8	12.4	18.8	24.8	30.6	36.2	41.9	46.4	51.5	56.1	60.4					63.1
138	.089	.494	09.1	15.9	20.9	26.2	31.8	37.0	42.0	47.7	53.5	58.6	63.6	69.3				70.7
139	.089	.494	08.0	15.9	20.4	25.9	31.4	36.8	42.0	47.7	52.5	57.9	63.6					68.7
140	.090	.490	08.2	14.8	19.3	25.0	29.5	34.5	39.8	45.0	49.7	54.4	59.5					62.4
146	.088	.495	08.9	14.9	20.0	26.1	30.9	36.8	42.4	47.7	53.6	59.0	64.3	69.2				71.6
AVERAGE STRESS			8.1	14.8	20.0	25.7	31.1	36.5	41.9	47.0	52.3	57.3	62.4					70.0
STANDARD DEVIATION STRESS			.72	1.06	.89	.98	1.23	1.47	1.59	1.78	1.88	1.97	1.99					5.24
AVERAGE STRESS-3σ			5.9	11.6	17.3	22.8	27.4	32.2	37.1	41.8	46.7	51.4	56.4					54.3

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-3 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										T1 ST COND.			RESIN CONT				NOMINAL PER PLY THICKNESS				
S/N 7, S/N 11 S/N 7 IV A	TENSION	0°	95% RH @ 125° F FOR 42 DAYS										-65° F FOR 30 MINS.			31.0%				.0096				
STRAIN IN IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN 2					
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																						
S/N 11 - 119	.081 .496	09.4	18.7	24.7	31.0	37.4	43.6	50.4	57.5	63.5	69.0	75.5	81.0	87.1			87.5	.0266	.0401					
127	.084 .497	09.0	17.8	23.2	29.0	35.0	41.3	48.0	54.0	60.2	66.0	71.9	77.5				83.0	.0260	.0417					
129	.082 .496	09.9	19.2	24.9	30.8	36.9	43.4	49.7	56.1	62.5	69.0	75.0	80.8	86.2			87.1	.0264	.0406					
131	.088 .496	08.0	16.5	23.0	28.2	33.8	39.6	45.9	51.5	57.4	63.1	68.5					72.5	.0240	.0436					
133	.082 .487	10.5	19.5	25.2	31.3	37.4	43.7	50.0	57.2	63.4	69.3	75.0	81.3	87.3			89.5	.0272	.0400					
135	.086 .481	09.7	18.2	24.2	29.8	36.0	41.8	47.8	53.9	50.2	65.5	71.3	77.0	82.0			83.4	.0266	.0414					
144	.086 .493	04.4	17.7	23.6	29.5	35.4	41.3	47.5	54.0	59.9	65.5	71.1	76.8	82.5			84.7	.0280	.0424					
146	.086 .494	09.4	17.9	23.8	29.4	35.3	41.2	47.9	54.1	60.0	65.6	71.3	76.5				79.5	.0262	.0425					
148	.086 .493	09.0	17.7	23.6	29.5	35.4	41.3	47.5	53.6	59.7	65.2	70.9	76.5	77.5	77.9		78.4	.0268	.0424					
150	.088 .493	09.2	17.3	23.5	28.8	34.6	40.3	46.3	52.1	57.9	63.5	69.2	74.3				76.3	.0247	.0434					
AVERAGE STRESS										DATA CONTINUED ON NEXT PAGE														
STANDARD DEVIATION STRESS																								
AVERAGE STRESS-3σ																								

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-3 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N 7, S/N 11 S/N 7 IV A	TENSION	0°		90% RH @ 125° F FOR 42 DAYS				-65° F FOR 30 MIN.				31.0%				.0086				
STRAIIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS	AREA IN. 2
SPEC. NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
S/N 7 IV A - 84	.072	.491	.08.1	17.0	24.1	29.5	34.8	40.8	46.8	52.7	58.4	64.0	C					87.0	C	.0363
87	.069	.492	.08.9	17.7	25.1	29.8	36.0	41.5	47.5	53.7	59.6	66.2	71.4	77.0	82.6	87.4	-	90.0	.0300	.0339
91	.068	.493	.08.7	17.6	24.5	29.8	36.8	41.8	47.8	53.8	60.0	66.7	71.6	-				74.0	.0230	.0336
96	.068	.494	.08.9	17.8	26.3	29.8	36.0	42.3	49.0	56.0	61.0	67.0	72.9	78.9	78.9	83.4	-	84.0	.0268	.0356
99	.069	.498	.08.8	17.5	24.8	30.6	36.2	42.3	48.7	54.3	60.5	67.1	72.6	77.4	81.6	-		84.0	.0280	.0343
106	.076	.496	.08.8	16.5	24.0	28.8	33.5	39.4	46.0	50.5	55.9	61.2	66.5	72.1	76.5	-		79.8	.0280	.0376
107	.077	.495	.08.9	16.5	23.6	28.4	33.4	39.2	44.8	49.9	55.4	60.9	66.7	71.6	75.5	-		76.6	.0368	.0381
114	.069	.497	.08.8	17.6	24.9	30.8	36.3	42.2	48.3	54.6	60.5	66.4	71.6	77.5	82.9	-		84.3	.0268	.0542
S/N 7 - 94	.074	.495	.08.2	18.4	23.2	28.7	34.2	40.2	46.9	52.0	57.4	63.1	68.5	73.8	79.3	-		81.7	.0278	.0366
123	.073	.496	.08.3	18.0	24.3	27.8	33.2	38.6	44.3	49.7	55.3	60.7	66.3	71.9	76.0	-		78.5	.0278	.0382
AVERAGE STRESS			9.0	17.5	24.2	29.5	35.3	41.3	46.5	53.5	59.4	64.6	70.9					82.3	.0263	
STANDARD DEVIATION STRESS			.59	.91	.71	.99	1.26	1.43	1.97	2.36	2.46	2.63	2.71					4.97	.00182	
AVERAGE STRESS-3σ			7.2	14.8	22.1	28.5	31.5	37.0	46.6	46.1	52.0	56.7	62.8					67.4	.0208	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AII-4 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT	NOMINAL PER PLY THICKNESS																
S/N 7 S/N 11, S/N 15	TENSION	90°	95% RH @ 125°F FOR 42 DAYS	-65° F FOR 30 MINS.	31.0%	.0090																
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030						
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI														MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²			
S/N 7-29	.076	.491	08.0	16.1	20.6	25.2	29.8	34.3	38.9	44.0	48.3	52.5	56.8	61.0			62.0	.0248	.0373			
31	.074	.492	08.5	16.4	21.4	25.8	30.8	36.4	40.1	46.1	49.5	54.2	58.5	62.6			65.8	.0254	.0364			
33	.073	.493	08.5	16.1	21.1	25.6	30.3	35.3	40.0	45.0	49.5	54.3	58.6	63.9			64.8	.0248	.0390			
37	.074	.495	08.2	15.8	21.0	25.4	30.1	35.0	40.0	44.8	49.3	54.1	58.8	62.9			64.2	.0242	.0366			
43	.071	.490	08.2	17.2	22.4	27.6	32.8	38.0	43.1	48.3	53.3	58.0	62.6	62.3			69.3	.0248	.0348			
46	.069	.496	08.4	17.8	23.4	28.4	33.6	39.2	44.2	49.7	55.0	60.0	65.0	69.6			70.9	.0244	.0342			
51	.071	.490	08.2	17.3	22.2	27.3	32.2	37.7	42.8	48.3	53.7	58.6	63.5	68.1			72.4	.0254	.0318			
54	.068	.491	08.4	16.5	22.8	27.6	33.0	37.7	43.5	49.1	54.5	60.0	65.5	70.5			72.1	.0250	.0334			
57	.068	.493	08.3	17.3	23.0	28.0	33.1	38.0	43.6	49.6	54.3	60.0	66.0	70.5			71.0	.0246	.0336			
111	.074	.492	08.0	15.1	21.4	25.8	30.8	36.7	41.2	46.1	51.4	56.3	61.9	67.0			70.4	.0254	.0364			
AVERAGE STRESS										DATA CONTINUED ON NEXT PAGE												
STANDARD DEVIATION STRESS																						
AVERAGE STRESS-3σ																						

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-4 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 7	S/N 11, S/N 15	TENSION				90°				95% RH @ 125°F FOR 42 DAYS				-65°F FOR 30 MINS.				31.0%		.0090	
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²		
SPEC. NO.	T ⁽¹⁾	STRESS - KSI																		W ⁽¹⁾	
S/N 11 - 173	.086	.501	08.5	16.2	22.1	27.4	32.6	38.2	43.6	49.4	55.0	59.9	64.7	70.0	(1) 75.1		79.5	(1) .0278	.0426		
175	.086	.497	08.7	16.8	22.0	27.4	32.2	37.9	43.2	48.5	53.7	58.9	63.5	68.2	72.9		75.2	.0274	.0428		
183	.083	.511	10.6	18.4	24.0	29.6	35.5	41.0	46.5	52.6							56.7	.0174	.0425		
187	.088	.509	08.5	16.0	21.8	26.8	32.0	37.1	42.4	48.0	52.9	58.1	63.0	67.7			67.2	.0244	.0447		
191	.087	.499	09.2	17.1	24.0	27.7	31.8	36.8	44.5	49.9	55.4						57.2	.0190	.0434		
S/N 15 - 93	.095	.495	08.5	16.0	21.5	26.8	32.0	36.8	40.8	47.5	52.8	57.5	62.5	67.0			69.0	.0249	.0470		
94	.095	.492	08.6	16.5	22.0	26.9	31.9	37.4	42.8	48.2	53.5	58.9	63.5				66.4	.0229	.0467		
96	.091	.497	08.9	17.3	23.0	27.6	33.2	38.5	44.2	49.8	54.9	60.2	65.3				67.2	.0226	.0462		
97	.092	.498	09.2	17.2	23.0	27.8	32.7	38.2	43.3	48.9	54.1	59.5	64.5				68.6	.0238	.0458		
98	.092	.497	08.8	16.4	22.3	27.2	32.8	37.8	43.1	48.8	54.0	59.3	64.5				67.4	.0232	.0457		
AVERAGE STRESS			8.3	16.6	22.2	27.1	32.2	37.4	42.6	48.0							67.9	.0241			
STANDARD DEVIATION STRESS			.34	.78	.96	1.10	1.36	1.61	1.91	2.11							2.98	.00224			
AVERAGE STRESS-3σ			7.3	14.3	19.3	23.8	28.2	32.6	36.9	42.7							59.0	.0174			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
-AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-5 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
S/N 11, S/N7 IVA, S/N7	TENSION	0°				95% RH @ 125° F FOR 42 DAYS								25°F FOR 30 MIN.				31.0%				.0091																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	STRESS - KSI				MAX STRESS				STRAIN AT MAX STRESS				AREA IN. 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
SPEC NO.	T ⁽¹⁾ W ⁽¹⁾																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
S/N 7 IV A - 86	.071 .492	08.4	16.9	23.4	28.5	34.4	40.4	46.2	51.9	57.5	63.0	67.9																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

FOOTNOTES. (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-6 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS
S/N 7, S/N 11	TENSION	90°	95% RH @ 125° F FOR 42 DAYS	25° F FOR 30 MIN.	31.0%	.0790
STRAIN IN./IN.						
S/E NO.	T (1)					
S/N 7-27	.077 .491	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
35	.073 .493	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
41	.071 .490	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
48	.070 .496	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
56	.068 .496	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
S/N 11-120	.091 .492	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
124	.091 .493	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
138	.089 .492	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
142	.089 .494	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
441	.088 .498	.002 .004 .006 .008 .010 .012 .014 .016 .018 .020 .022 .024 .026 .028 .030	STRESS - KSI			
AVERAGE STRESS						
STANDARD DEVIATION STRESS						
AVERAGE STRESS-3σ						

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-7 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 11, S/N 7 IV A S/N 7	TENSION	0°	125° F @ 55% RH FOR 42 DAYS										R7				31.0%				.0088			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030								
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																					
S/N 7 IV A 85	.071	.491	08.3	16.0	22.8	28.1	33.8	39.0	45.3	51.6	57.0	62.5	-	-	-	-	-	65.0	.0219	.0349				
90	.068	.493	08.3	16.0	23.6	28.2	34.4	40.8	46.9	53.0	59.1	64.4	-	-	-	-	-	67.8	.0217	.0335				
97	.069	.497	08.7	16.6	23.3	28.8	35.0	41.3	47.1	52.5	58.6	63.5	-	-	-	-	-	64.5	.0208	.0343				
101	.072	.497	08.4	16.2	23.2	28.8	34.3	40.3	46.0	51.6	57.5	62.0	-	-	-	-	-	63.5	.0210	.0369				
104	.074	.494	08.2	15.9	22.4	27.8	33.4	39.2	44.7	50.4	55.7	61.1	-	-	-	-	-	63.9	.0216	.0365				
106	.077	.494	07.4	14.6	21.6	26.8	32.1	37.8	43.0	48.1	54.0	59.2	63.0	-	-	-	-	63.0	.0220	.0380				
110	.071	.493	08.3	16.0	22.8	28.0	33.7	39.4	45.4	50.9	56.5	61.7	-	-	-	-	-	64.4	.0213	.0350				
116	.068	.496	08.9	17.2	24.2	30.1	36.2	42.1	48.1	54.3	60.3	65.4	-	-	-	-	-	66.1	(I)	.0337				
S/N 7 - 58	.070	.493	08.4	15.9	23.2	28.6	34.2	40.1	46.1	51.9	57.4	62.6	65.0	-	-	-	-	65.3	.0220	.0345				
102	.072	.493	08.5	16.1	23.0	28.2	33.7	39.4	45.4	51.0	56.6	61.5	-	-	-	-	-	64.2	.0210	.0355				
AVERAGE STRESS			DATA CONTINUED ON NEXT PAGE																					
STANDARD DEVIATION STRESS																								
AVERAGE STRESS-3σ																								

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-7 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING					TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 11,S/N 7 IV A S/N 7	TENSION	0°			125°F @ 95% HUM: FCR 42 DAYS					RT				31.0%				.0088			
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KS.																			
S/N 11 - 118	.081 .495	09.0	17.5	23.4	29.5	36.5	42.0	48.5	54.7	C							67.0	C	.0400		
118	.091 .495	07.8	15.6	21.8	26.9	32.9	38.9	45.1	50.9	57.4	62.0	-					64.1	.0212	.0450		
128	.083 .495	08.5	16.6	23.2	28.8	36.1	41.5	47.5	54.1	60.0	-						64.6	.0200	.0410		
130	.094 .497	07.9	14.9	21.3	26.5	32.0	37.8	43.3	49.0	54.6	59.7	-					61.3	.0210	.0469		
132	.084 .497	08.4	16.3	22.6	28.3	34.8	41.0	47.0	53.3	59.0	69.6	-					64.8	.0208	.0417		
134	.089 .479	08.2	15.9	22.1	27.8	33.4	39.5	45.2	51.3	56.5	61.1	-					61.5	.0204	.0425		
143	.089 .494	08.4	15.7	21.9	27.4	33.0	39.2	45.1	51.1	56.9	61.6	-					63.4	.0210	.0439		
145	.085 .494	08.3	16.5	22.6	28.6	34.6	41.0	47.1	52.9	59.0	63.7	-					65.0	.0200	.0420		
147	.089 .494	08.0	15.3	21.6	26.9	32.8	38.8	44.5	50.0	55.4	-						60.4	.0200	.0439		
149	.088 .493	08.5	16.2	22.4	28.2	34.0	39.8	46.1	51.9	57.1	-						62.7	.0198	.0434		
AVERAGE STRESS		8.3	16.0	22.1	28.1	33.9	40.0	46.9	51.7	57.1	-						64.0	.0210			
STANDARD DEVIATION STRESS		0.36	0.68	0.77	0.91	1.10	1.72	1.46	1.67	1.87	-						2.04	.00064			
AVERAGE STRESS-3σ		07.2	13.0	2.03	25.0	30.6	38.3	41.5	46.7	51.9	-						57.9	.0191			

FOOTNOTES: (1) TC - FAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-8 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS																			
S/N 7, S/N 11	TENSION	90°	125° F @ 95% RH FOR 42 DAYS	RT	31.0%	.0088																			
STRAIN IN./IN.																									
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2				
S/N 7 - 26	.077	.496	07.1	13.5	18.5	22.8	27.5	31.8	36.4	40.5	44.7	-	-	-	-	-	-	-	48.0	.0195	.0382				
28	.078	.491	07.6	14.0	18.8	23.2	27.4	31.8	36.3	40.6	44.6	48.5	-	-	-	-	-	-	49.6	.0206	.0383				
32	.073	.493	07.5	14.7	20.0	24.7	29.7	33.7	39.4	44.1	48.6	52.6	-	-	-	-	-	-	53.0	.0202	.0360				
34	.074	.493	07.7	14.5	19.7	24.4	29.8	34.2	38.9	43.5	47.8	-	-	-	-	-	-	-	51.4	.0195	.0365				
40	.074	.494	08.0	14.0	19.5	24.4	29.2	34.0	38.8	43.3	47.4	-	-	-	-	-	-	-	50.5	.0193	.0365				
42	.070	.490	07.9	14.6	20.4	26.0	30.3	35.6	40.6	45.1	49.5	54.6	-	-	-	-	-	-	54.6	.0200	.0343				
45	.070	.491	08.4	15.7	20.9	25.6	30.5	35.6	40.7	45.6	50.4	-	-	-	-	-	-	-	54.2	.0196	.0344				
47	.068	.495	08.6	15.7	21.5	25.7	31.6	36.9	42.3	47.2	52.8	57.0	-	-	-	-	-	-	57.5	.0201	.0337				
52	.069	.490	08.6	16.0	21.3	26.6	31.8	37.2	42.6	48.1	53.0	-	-	-	-	-	-	-	57.5	.0200	.0338				
55	.067	.491	08.5	16.1	21.9	26.9	32.2	37.6	43.2	48.6	53.9	58.8	-	-	-	-	-	-	59.3	.0202	.0329				
AVERAGE STRESS							DATA CONTINUED ON NEXT PAGE																		
STANDARD DEVIATION STRESS																									
AVERAGE STRESS-3σ																									

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-8 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION					SPEC. CONDITIONING					TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS				
S/N 7, S/N 11	TENSION	90°					125° F @ 85% HUM. FOR 42 DAYS					R.T.					31.0%					.0088				
STRAIN - IN./IN.		STRESS - KSI																								
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS		AREA IN. 2				
S/N 11 - 171	.085	.502	08.5	15.7	21.7	27.9	32.4	38.0	43.3	48.6	53.6	-						54.2	.0186				.0426			
172	.086	.500	09.3	16.2	21.9	26.9	32.1	37.6	43.1	48.1	53.1	-						54.8	.0187				.0430			
174	.085	.500	08.3	15.2	20.6	25.5	31.0	36.8	42.0	47.3	52.2	-						55.3	.0190				.0425			
176	.086	.499	08.4	15.7	21.1	26.6	32.1	37.7	43.4	48.5								51.0	.0172				.0430			
178	.084	.513	09.3	16.6	21.9	27.4	33.3	38.6	44.8	50.1	55.6	-						55.9	.0182				.0431			
184	.084	.505	09.4	17.0	22.6	27.8	33.3	39.0	44.8	50.3								54.6	.0177				.0424			
186	.088	.513	08.3	15.5	20.8	25.7	31.0	36.2	41.3	46.4								50.4	.0178				.0451			
188	.088	.501	08.9	15.7	21.4	26.7	32.0	37.4	42.9	48.4								51.4	.0170				.0441			
190	.091	.511	08.0	15.3	20.6	25.8	31.0	36.1	41.5	46.8	51.6	-						52.7	.0184				.0465			
192	.089	.505	08.7	15.8	21.3	26.8	31.8	37.0	42.4	47.5	52.8	-						54.3	.0186				.0449			
AVERAGE STRESS			08.4	15.4	20.8	25.9	31.0	36.1	41.4	46.4								53.5	.0190							
STANDARD DEVIATION STRESS			.62	.88	1.08	1.50	1.56	2.07	2.43	2.81								2.91	.00105							
AVERAGE STRESS-3σ			6.5	12.8	17.6	21.4	26.3	29.9	34.1	38.6								44.8	.0158							

FOOTNOTES: (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-9 REDUCED TEST DATA

ANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N7, S/N 15	TENSION	0°	NONE										160°F FOR 30 MIN				31.0%				.0092			
STRAIN IN./IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030					MAX STRESS	STRAIN AT MAX STRESS	AREA IN.²	
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																					
63	.097	.496	36.2	13.3	19.8	24.8	30.2	35.8	41.4	46.8	52.4	57.6	-	-	-	-	-	-	59.0	.0204		.0481		
64	.096	.495	07.0	14.2	20.4	25.2	30.5	36.4	41.7	47.0	52.2	-	-	-	-	-	-	-	54.3	.0193		.0475		
65	.095	.496	07.4	14.4	20.8	26.1	31.0	37.0	42.5	48.2	53.4	-	-	-	-	-	-	-	56.0	.2191		.0471		
66	.097	.495	07.9	15.2	20.8	25.8	31.0	36.9	42.5	47.7	52.7	58.1	-	-	-	-	-	-	60.6	.0213		.0480		
67	.097	.496	07.5	14.8	20.4	25.8	31.0	35.8	42.2	47.4	52.6	-	-	-	-	-	-	-	55.5	.0190		.0481		
68	.090	.496	06.7	14.5	20.6	26.0	31.9	37.8	43.8	49.7	55.0	-	-	-	-	-	-	-	57.7	.0190		.0447		
69	.094	.496	07.5	14.4	20.0	26.0	32.0	37.5	43.4	49.0	54.4	-	-	-	-	-	-	-	57.7	.0196		.0466		
70	.094	.496	07.1	14.0	20.6	26.0	31.8	37.4	43.0	48.7	54.4	-	-	-	-	-	-	-	58.3	.0197		.0466		
71	.095	.496	06.7	13.8	20.2	25.4	30.8	36.8	42.9	48.0	53.1	-	-	-	-	-	-	-	61.0	.0211		.0471		
72	.094	.495	06.9	14.4	20.6	26.0	32.2	38.1	43.8	49.5	55.0	60.3	-	-	-	-	-	-	62.2	.0210		.0465		
AVERAGE STRESS																								
STANDARD DEVIATION STRESS																								
AVERAGE STRESS-3σ																								

FOOTNOTES: (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-9 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(II) CURVE IDEALIZED

TABLE - AII-10 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING							TEST COND.					RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 15	TENSION	90°				NONE							160°F FOR 30 MIN.					31.0%				.0094			
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2					
			STRESS - KSI																						
S/N 15 - 81	.094	.496	06.8	12.9	18.3	22.6	27.3	32.4	37.6	42.6	47.4	-	-	-	-	-	-	49.3	.0192	.0465					
82	.095	.496	06.6	13.6	18.0	22.9	28.5	32.9	38.2	43.3	47.8	-	-	-	-	-	-	49.7	.0188	.0471					
84	.093	.495	06.1	13.1	17.8	22.8	27.8	32.6	38.0	43.5	47.9	-	-	-	-	-	-	50.7	.0190	.0460					
85	.094	.496	07.5	13.8	18.7	23.6	28.8	33.4	38.8	44.1	48.4	-	-	-	-	-	-	50.1	.0188	.0465					
86	.093	.494	07.0	13.5	18.5	23.5	28.7	33.7	39.2	44.4	49.0	-	-	-	-	-	-	49.4	.0181	.0462					
87	.095	.496	06.8	13.4	18.3	22.8	27.6	33.0	37.6	42.5	47.4	-	-	-	-	-	-	49.7	.0192	.0471					
88	.096	.493	06.8	13.7	18.4	23.3	28.2	32.8	38.1	43.1	47.5	-	-	-	-	-	-	49.3	.0190	.0473					
89	.094	.493	06.9	13.8	19.0	23.8	29.0	34.2	39.0	44.3	-	-	-	-	-	-	-	48.0	.0178	.0463					
90	.094	.492	07.6	13.9	18.6	23.8	28.2	33.6	38.8	43.2	-	-	-	-	-	-	-	47.5	.0178	.0462					
92	.095	.493	06.6	13.2	18.2	22.8	27.8	32.9	37.4	42.5	47.0	-	-	-	-	-	-	49.5	.0192	.0468					
AVERAGE STRESS			6.7	13.5	18.4	23.2	28.2	33.2	38.2	43.4								49.3	.0186						
STANDARD DEVIATION STRESS			0.47	0.33	0.35	0.46	0.56	0.58	0.64	0.72								0.95	.00066						
AVERAGE STRESS-3σ			5.3	12.5	17.4	21.8	26.5	31.5	26.4	41.2								46.5	.0169						

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
- (C) CURVE EXCEEDED THE GRAPH PAPER
- (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
- (I) CURVE IDEALIZED

TABLE - AII-11 REDUCED TEST DATA

PANEL NO.	T/TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS
S/N 7, S/N 7 IVA S/N 11	TENSION	0°	95% RH @ 125°F FOR 42 DAYS	160° F FOR 10 MIN	31.0%	.0090
	STRAIN - IN./IN.	.002 .004 .006 .008	.010 .012 .014 .016	.018 .020 .022 .024	.026 .028 .030	MAX STRESS
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI				
S/N - 7 97	.073 .497	07.8 14.9 21.6 27.6	33.2 39.2 44.5 49.8	-		53.7 .0176 .0362
S/N 7 IVA - 89	.058 .494	08.3 15.8 22.3 29.2	35.2 41.0 46.5 -			49.5 .0150 .0336
92	.069 .494	07.6 ⁽¹⁾ 14.7 ⁽¹⁾ 22.0 ⁽¹⁾ 28.8	34.9 40.5 46.4 51.9	-		54.4 .0174 .0341
94	.068 .494	08.0 15.2 22.0 28.6	34.6 40.2 46.2 50.9 ⁽¹⁾			55.5 .0179 .0336
98	.070 .492	07.2 14.4 21.6 28.4	34.5 40.3 46.0 51.2			55.3 .0178 .0348
102	.074 .494	07.1 14.3 20.8 27.2	32.9 38.4 43.6 48.3	53.0 -		53.4 .0182 .0365
106	.077 .493	07.4 13.7 20.0 26.0	31.6 36.8 42.2 47.2	51.0 -		51.4 .0182 .0300
109	.076 .495	06.9 13.6 19.7 25.8	31.7 36.8 42.0 47.4	-		51.0 .0180 .0376
112	.070 .497	07.5 15.0 22.2 28.8	35.1 40.8 46.6 51.8	-		54.1 .0172 .0348
115	.068 .496	08.3 15.7 22.8 29.6	35.7 41.5 47.2 52.3	-		53.4 .0168 .0337
AVERAGE STRESS			DATA CONTINUED ON NEXT PAGE			
STANDARD DEVIATION STRESS						
AVERAGE STRESS-3σ						

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-12 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.		NOMINAL PER PLY THICKNESS							
S/N7, S/N 11	TENSION	90°	95% R H @ 125°F FOR 42 DAYS								160°F FOR 10 MIN				31.0%		.0090							
STRAIN IN./IN.		STRESS - KSI																						
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²				
S/N 7, 11	.073	.495	07.2	13.3	19.4	24.6	29.1	34.1	-									36.2	.0128	.0361				
12	.073	.495	06.9	13.3	19.4	24.4	29.4	34.4	-									38.7	.0138	.0361				
13	.073	.495	06.6	13.3	19.4	25.0	29.6	34.6	-									38.4	.0136	.0361				
14	.072	.495	07.4	13.5	19.4	25.0	29.8	34.8	39.4									42.6	.0154	.0356				
15	.073	.495	06.9	13.0	18.8	24.1	28.8	33.8	38.8									39.2	.0142	.0361				
16	.073	.487	07.3	13.5	19.7	25.0	29.8	34.9	39.4	-								42.0	.0152	.0356				
17	.072	.488	06.5	13.1	18.8	24.2	29.0	34.1	39.2	-								42.6	.0154	.0352				
18	.073	.492	06.7	12.5	17.8	22.6	26.4	30.4	34.3	-								35.3	.0142	.0359				
19	.073	.490	06.2	12.3	17.6	22.4	26.6	30.5	-									34.0	.0138	.0358				
20	.070	.490	06.7	12.8	18.1	23.0	27.1	31.2	35.0	-								36.6	.0142	.0343				
AVERAGE STRESS										DATA CONTINUED ON NEXT PAGE														
STANDARD DEVIATION STRESS																								
AVERAGE STRESS-3σ																								

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

DATA CONTINUED ON NEXT PAGE

TABLE - AII-12 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N7, S/N11	TENSION	90°				95% RH @ 125°F FOR 42 DAYS				160°F FOR 10 MIN				31.0%				.0090			
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²
			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030				
S/N 11 - 119	.092 .493		06.8	12.6	18.1	22.7	27.4	32.2	-										36.1	.0137	.454
121	.093 .491		06.1	12.1	17.3	21.7	25.9	30.7	34.9	-									36.1	.0144	.456
122	.086 .492		06.6	13.7	19.4	24.6	29.8	36.0	40.2	-									44.4	.0156	.423
123	.085 .492		07.7	14.4	20.6	25.8	31.1	36.6	42.2	-									46.8	.0160	.418
125	.092 .495		06.6	13.2	18.7	23.8	28.0	32.6	37.2	-									39.4	.0150	.455
136	.080 .482		07.6	14.2	20.0	24.0	30.0	34.8	39.6	-									41.2	.0146	.434
137	.089 .497		07.9	14.5	19.9	25.0	29.7	34.8	39.6	-									42.9	.0154	.442
139	.080 .496		06.7	13.4	18.8	23.6	28.2	33.2	37.9	42.0	-								42.8	.0162	.446
141	.088 .494		07.6	14.3	20.0	25.3	30.6	36.8	41.0	-									42.2	.0145	.436
146	.089 .497		06.7	12.8	18.1	23.1	27.6	32.6	37.4	-									40.3	.0152	.442
AVERAGE STRESS			6.9	13.3	19.0	24.0	28.7	33.5											39.8	.0147	
STANDARD DEVIATION STRESS			.50	.69	.90	1.11	1.48	2.47											3.50	.00082	
AVERAGE STRESS-3σ			5.4	11.2	16.3	20.7	24.3	26.1											29.3	.0119	

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-13 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND.				RESIN CONT				NOMINAL PER PLY THICKNESS					
S/N 7	TENSION	0°		400°F FOR 100 HRS				400°F FOR 30 MIN				31.0%				.0080					
SPEC NO	STRAIN IN. IN	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
				002	004	006	008	010	012	014	016	016	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN ²
S/N 7 - 85		.066	.496	06.1	12.8	18.9	25.6	31.7	37.8	44.0	49.3	55.0	-	-	-	-	-	-	56.1	.0187	.0328
86		.066	.496	06.2	13.4	19.8	26.0	31.7	37.5	43.3	48.8	-	-	-	-	-	-	-	51.9	.0170	.0328
87		.070	.497	06.4	12.1	17.9	24.0	29.4	35.6	40.8	46.3	51.5	-	-	-	-	-	-	53.0	.0186	.0346
88		.072	.495	06.0	12.1	18.2	23.8	29.4	34.7	40.0	45.6	-	-	-	-	-	-	-	50.3	.0180	.0357
95		.074	.494	05.7	11.8	17.3	22.7	27.6	33.1	38.4	43.7	48.4	-	-	-	-	-	-	49.4	.0186	.0366
99		.073	.494	05.8	12.0	17.8	23.1	28.6	34.2	39.8	45.0	50.0	-	-	-	-	-	-	50.5	.0186	.0360
100		.072	.496	06.2	12.3	17.9	23.6	29.2	34.5	39.8	45.4	50.1	-	-	-	-	-	-	51.1	.0186	.0357
101		.072	.494	06.2	12.3	17.9	23.6	28.6	34.3	39.6	44.6	-	-	-	-	-	-	-	48.1	.0174	.0356
109		.071	.492	06.3	12.3	18.4	24.0	29.2	34.7	40.0	45.4	-	-	-	-	-	-	-	47.4	.0167	.0349
110		.071	.491	06.3	12.3	18.4	24.0	29.7	35.0	40.2	45.7	-	-	-	-	-	-	-	49.4	.0178	.0349
AVERAGE STRESS																					
STANDARD DEVIATION STRESS																					
AVERAGE STRESS-3σ																					
DATA CONTINUED ON NEXT PAGE																					

FOOTNOTES (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-13 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO	TYPE TEST	TEST DIRECTION			SPEC CONDITIONING							TEST COND					RESIN CONT		NOMINAL PER PLY THICKNESS	
S/N 15	TENSION	0°			400°F FOR 100 HRS							400°F FOR 30 MIN					31.0%		.0090	
STRAIN IN IN		002	004	006	006	006	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN 2
SPEC NO	T (1) W (1)	STRESS - KSI																		
S/N 15-41	.006 .406	06.1	12.2	17.8	23.2	28.6	34.0	39.3	44.1	-	-	-	-	-	-	-	-	42.3	.0161	.0476
42	.004 .406	06.0	12.0	18.0	24.0	29.8	35.4	-	-	-	-	-	-	-	-	-	-	38.0	.0128	.0466
46	.007 .406	05.4	11.3	17.5	23.4	29.0	-	-	-	-	-	-	-	-	-	-	-	36.7	.0130	.0410
52	.007 .402	06.4	12.4	18.6	24.5	30.5	36.2	41.7	-	-	-	-	-	-	-	-	-	46.4	.0158	.0413
53	.003 .401	06.1	12.1	18.3	24.1	30.0	35.9	41.1	-	-	-	-	-	-	-	-	-	46.4	.0159	.0417
54	.004 .404	06.4	12.5	18.5	24.5	30.1	35.9	-	-	-	-	-	-	-	-	-	-	40.8	.0137	.0485
56	.003 .406	06.5	12.6	18.2	24.3	29.9	35.6	41.3	46.2	-	-	-	-	-	-	-	-	47.5	.0165	.0461
56	.003 .406	06.1	11.9	17.8	23.9	29.8	35.6	40.8	-	-	-	-	-	-	-	-	-	45.5	.0159	.0461
57	.003 .404	06.5	12.6	18.3	24.4	30.2	36.1	41.3	46.0	-	-	-	-	-	-	-	-	47.1	.0162	.0460
58	.001 .404	06.2	12.4	18.7	24.9	30.6	36.4	41.7	47.5	-	-	-	-	-	-	-	-	48.4	.0164	.0460
AVERAGE STRESS		6.1	12.3	18.2	24.1	29.7	35.3	-	-	-	-	-	-	-	-	-	-	47.3	.0166	
STANDARD DEVIATION STRESS		.29	.43	.55	.79	1.01	1.16	-	-	-	-	-	-	-	-	-	-	4.87	.00181	
AVERAGE STRESS-30°		5.9	11.0	16.6	21.7	26.7	31.8	-	-	-	-	-	-	-	-	-	-	32.7	.0112	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-14 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS						
S/N 15, S/N7	TENSION	90°		400°F FOR 100 HRS				400°F FOR 30 MIN				31.0%				.0093						
STRAIN IN./IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN ²			
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																				
S/N15- 102	.005 .495	05.5	10.8	16.2	21.3	26.2	31.0	-									34.0	.0138	.0470			
103	.005 .495	05.3	10.8	16.0	20.8	25.8	30.8	-									33.3	.0135	.0470			
104	.004 .496	05.8	11.2	16.3	21.8	27.0	32.0	-									32.4	.0121	.0466			
106	.005 .495	05.8	11.3	16.6	21.7	26.8	31.7	-									32.1	.0130	.0470			
107	.002 .496	06.1	12.3	17.3	22.4	27.6	-										31.4	.0115	.0456			
108	.007 .495	05.2	10.4	15.8	20.8	25.6	-										28.4	.0111	.0480			
109	.006 .496	05.5	10.9	16.2	21.2	26.1	31.1	-									32.0	.0124	.0476			
111	.006 .496	05.7	11.4	16.3	21.6	26.5	31.7	-									33.9	.0130	.0476			
112	.006 .495	05.7	10.5	16.2	21.5	26.1	30.8	-									31.3	.0121	.0475			
113	.007 .492	05.3	10.5	15.6	20.8	25.6	-										30.2	.0119	.0476			
AVERAGE STRESS									DATA CONTINUED ON NEXT PAGE													
STANDARD DEVIATION STRESS																						
AVERAGE STRESS-3σ																						

DATA CONTINUED ON NEXT PAGE

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-14 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND				RESIN CONT				NOMINAL PER PLY THICKNESS			
S/N 7, S/N15	TENSION	90°		400°F FOR 100 HRS				400°F FOR 30 MIN				31.0%				.0093			
STRAIN IN/IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN 2
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
S/N 7 - 21	.066 .495	05.5	10.7	15.2	19.5	23.4	27.4	-									28.0	.0124	.0329
25	.072 .495	05.1	10.1	14.6	18.6	22.5	26.4	-									28.9	.0135	.0356
38	.072 .494	05.1	09.6	14.3	19.1	23.6	28.0	-									29.8	.0128	.0356
39	.073 .493	05.1	10.0	14.5	18.6	22.8	26.7	-									29.6	.0136	.0360
44	.070 .489	06.4	11.7	17.0	21.1	26.4	-										29.1	.0112	.0342
49	.070 .498	05.7	11.5	16.0	20.6	25.0	29.2	-									30.9	.0128	.0349

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSION METER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(ID) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(II) CURVE IDEALIZED

TABLE - AII-15 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.	NOMINAL PER PLY THICKNESS								
S/N 10	COMPRESSION	0°		1 Hr @ -65°F				-65°F For 36 Min				31.0%	.0092							
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
171	.004	.749	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²
17	.000	.749	.005	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	.064	.068	.072
188Y	.003	.753	.006	.010	.014	.018	.022	.026	.030	.034	.038	.042	.046	.050	.054	.058	.062	.066	.070	.074
192Z	.003	.752	.009	.013	.017	.021	.025	.029	.033	.037	.041	.045	.049	.053	.057	.061	.065	.069	.073	.077
212	.003	.751	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	.064	.068	.072	.076	.080
215	.000	.749	.015	.019	.023	.027	.031	.035	.039	.043	.047	.051	.055	.059	.063	.067	.071	.075	.079	.083
220	.004	.748	.018	.022	.026	.030	.034	.038	.042	.046	.050	.054	.058	.062	.066	.070	.074	.078	.082	.086
222	.004	.750	.021	.025	.029	.033	.037	.041	.045	.049	.053	.057	.061	.065	.069	.073	.077	.081	.085	.089
225	.002	.748	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	.064	.068	.072	.076	.080	.084	.088	.092
AVERAGE STRESS			8.5	16.7	24.9	33.2	42.2	49.1	56.6									73.1	.0186	
STANDARD DEVIATION STRESS			.50	.98	1.39	1.87	2.66	2.96	3.68									5.18	.00208	
AVERAGE STRESS-3σ			7.0	13.8	20.7	27.6	34.2	40.2	46.6									57.6	.0124	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AII-16 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N 7, S/N 10	COMPRESSION	90°	1 Hr @ -65°F								-65°F For 30 Min				31.0%				.0091				
TRAIN IN / IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2				
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																				
S/N 7 - 7	.072	.750	09.5	17.8	25.8	33.4	40.7	48.9	56.5	—							58.4	.0154	.0540				
28	.075	.748	08.3	15.1	21.4	25.8	29.9	33.8	37.4	41.0	44.4	47.4	51.0	53.6	—		55.6	.0251	.0561				
32	.076	.749	08.8	16.0	22.9	29.9	36.9	43.2	50.0	55.4	—						57.0	.0166	.0569				
36	.074	.749	07.2	16.6	26.2	36.1	46.0	55.1	—								58.1	.0130	.0554				
40	.075	.748	07.1	15.1	23.2	33.0	42.7	52.4	57.4	—							57.5	.0142	.0561				
45	.076	.750	07.2	14.0	21.0	28.1	34.8	41.3	47.4	53.0	58.5	—					59.9	.0199	.0570				
48	.068	.749	07.9	22.0	32.4	40.5	49.2	56.1	—								58.0	.0131	.0509				
49	.068	.749	10.8	16.7	24.6	32.4	39.3	48.1	57.0	—							58.3	.0144	.0509				
54	.068	.749	08.7	16.7	24.6	33.8	43.3	52.5	59.5	—							60.0	.0142	.0509				
58	.067	.750	09.8	18.9	29.8	37.8	46.2	52.7	—								56.4	.0136	.0503				
AVERAGE STRESS											DATA CONTINUED ON NEXT PAGE												
STANDARD DEVIATION STRESS																							
AVERAGE STRESS-3σ																							

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

DATA CONTINUED ON NEXT PAGE

TABLE - AII-16 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 7, S/N 10	COMPRESSION	90°				1 Hr @ -65°F				-65°F For 30 Min				31.0%				.0091			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC. NO.	r ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
S/N 10 - 181Y	.086 .760	08.5	17.1	24.8	32.7	40.3	47.3	54.3	—								59.5	.0157	.0646		
183Z	.090 .749	07.0	14.1	20.8	29.2	35.0	41.6	47.6	54.3	—							56.0	.0170	.0674		
185Y	.097 .750	07.6	15.8	22.8	29.4	35.7	41.9	47.4	—								51.6	.0155	.0728		
194	.093 .760	08.6	16.5	25.1	34.7	43.7	52.0	59.6	—								59.5	.0142	.0697		
196	.092 .742	09.3	16.7	24.4	31.4	39.2	46.0	—									53.0	.0138	.0688		
197	.094 .760	08.2	16.0	23.4	32.1	40.0	47.2	54.5	60.3	—							64.0	.0171	.0706		
202	.092 .761	08.9	14.3	21.7	29.0	36.2	42.7	49.2	55.7	61.8	—						64.8	.0193	.0691		
202Y	.093 .761	09.0	16.5	23.9	30.8	37.9	44.5	51.5	58.6	—							61.8	.0163	.0699		
204	.093 .760	07.9	15.9	22.6	29.8	36.4	43.6	50.5	60.0	—							61.8	.0170	.0693		
238	.093 .749	08.2	15.8	23.5	30.8	37.8	44.6	51.0	—								56.7	.0159	.0696		
AVERAGE STRESS		8.2	16.4	24.4	32.0	39.5	46.8										58.4	.0161			
STANDARD DEVIATION STRESS		1.03	1.79	2.83	3.47	4.53	5.70										3.17	.00286			
AVERAGE STRESS-3σ		5.2	11.1	16.9	21.6	26.9	29.7										48.9	.0076			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-17 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND		RESIN CONT.				NOMINAL PER PLY THICKNESS						
S/N7,S/N10,S/N11	COMPRESSION	0°	95% RH @ 125°F For 47 Days				-65oF For 30 Min		31.0%				0088						
STRAIN IN / IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MIN AT MAX STRESS	AREA IN. 2	
SPEC NO	T (1)	W (1)	STRESS - KSI																
S/N 7	.071	.750	12.0	19.2	23.9	25.0	29.0	30.8	35.0	39.0	42.0	43.3	46.5	-			53.0	.0232	.0531
72	.072	.750	10.2	18.5	26.6	35.0	42.6	49.1	54.1	-							55.4	(1) .0144	.0540
73	.078	.750	07.5	15.2	23.6	29.0	34.8	40.0	45.1	47.7	54.5	58.9	63.3	-			64.3	.0226	.0585
75	.070	.749	09.0	18.3	26.4	36.2	44.0	53.4	60.8	-							68.5	.0153	.0524
76	.070	.749	09.2	18.5	27.6	36.7	44.7	53.5	60.5	-							63.5	.0152	.0524
80	.069	.748	(1) 08.9	17.8	26.8	36.4	44.2	53.5	61.6	70.5	-						73.6	.0168	.0516
81	.069	.750	10.4	19.7	29.8	39.4	-										44.3	.0094	.0518
82	.070	.750	09.3	18.3	26.3	31.8	37.5	43.3	49.1	-							50.1	.0142	.0525
83	.069	.749	08.7	17.4	25.9	34.8	43.1	49.0	56.7	60.5	-						61.4	.0162	.0517
84	.070	.751	08.6	17.1	25.1	32.9	41.0	48.9	-								51.3	.0128	.0526
AVERAGE STRESS			DATA CONTINUED ON NEXT PAGE																
STANDARD DEVIATION STRESS																			
AVERAGE STRESS-3σ																			

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

DATA CONTINUED ON NEXT PAGE

TABLE - AII-17 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.		TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 10 28		COMPRESSION	0°		96% RH @ 126°F For 42 Days								-65°F For 30 Min				31.0%				.00888			
STRAIN - IN./IN.			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS	AREA IN.²			
SPEC. NO.		T ⁽¹⁾	STRESS - KSI																			W ⁽¹⁾		
S/N 10 214		.090	.750	10.1	17.8	26.8	33.7	42.5	49.3	57.0	63.8	71.0	—					73.8	.0187 ⁽¹⁾	.0675				
169		.086	.751	09.4	18.0	26.5	34.5	42.8	50.7	58.2	66.9	73.4	—					80.5	.0197	.0636				
S/N 11 220		.086	.750	09.4	18.8	27.2	36.1	43.9	51.8	59.6	67.1	—						71.0	.0169	.0637				
222		.090	.750	8.9 ⁽¹⁾	17.4 ⁽¹⁾	26.8	34.1	44.2	50.9	59.4	67.1	—						71.4	.0170 ⁽¹⁾	.0675				
224		.083	.750	09.0	18.5	27.6	35.8	44.6	53.0	61.0	68.2	75.5	—					81.0	.0199	.0623				
232		.089	.751	09.7	17.8	26.4	34.1	41.9	49.7	57.6	67.0	—						70.8	.0188	.0668				
236		.094	.750	07.8	16.3	24.2	32.1	39.7	47.1	54.1	61.4	67.7	74.5	—				74.7	.0201	.0706				
267		.088	.749	08.4	17.9	26.8	35.1	43.5	51.2	59.0	66.4	73.3	—					73.5	.0186	.0669				
271		.089	.749	08.2	15.9	24.0	31.8	39.4	46.9	54.0	63.4	—						66.7	.0173	.0666				
269		.089	.749	09.8	18.0	25.5	33.3	41.7	49.5	56.5	64.7	71.6	—					73.6	.0186	.0666				
AVERAGE STRESS			9.2	17.8	26.0	33.9												66.0	.0173					
STANDARD DEVIATION STRESS			1.00	1.08	1.52	3.11												10.75	.00324					
AVERAGE STRESS-3σ			6.2	14.6	21.4	24.6												34.8	.0075					

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AII-18 REDUCED TEST DATA

[illegible]

FOOTNOTES (1) TO NEAREST 001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(ID) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
AVERAGES BECAUSE OF COMPRESSION/EXTENSION

(1) CURVE IDEALIZED

TABLE - AII-18 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

DATA CONTINUED FROM PREVIOUS PAGE																			
PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND.				RESIN CONT.			NOMINAL PER PLY THICKNESS				
S/N7,S/N10,S/N11	COMPRESSION	90°		95% RH @ 125°F For 42 Days				-65°F For 30 Min				31.0%			.0088				
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC. NO	T (1) W (1)	STRESS - KSI																	
S/N 10 233	.080 .751	10.5	18.7	29.3	40.8	54.0	64.4	—	—	—	—	—	—	—	—	—	67.8	.0128	.0675
236	.087 .751	11.5	19.9	27.9	35.6	43.6	51.4	—	—	—	—	—	—	—	—	—	58.0	.0138	.0653
239	.091 .751	10.0	18.3	26.2	33.7	41.8	48.8	56.6	62.5	—	—	—	—	—	—	—	65.0	.0171	.0684
244	.091 .751	11.8	22.7	31.6	39.6	46.8	54.1	—	—	—	—	—	—	—	—	—	60.5	.0137	.0684
247	.094 .749	07.8	15.1	22.6	30.2	37.6	44.0	50.9	57.6	64.3	—	—	—	—	—	—	69.0	.0194	.0704
182	.093 .751	08.6	18.5	24.4	31.8	39.4	46.2	52.9	59.3	—	—	—	—	—	—	—	63.6	.0173	.0697
208	.087 .751	07.2	15.3	23.1	30.5	38.4	46.7	54.6	63.0	—	—	—	—	—	—	—	56.1	.0179	.0653
S/N 11 218	.083 .750	08.7	16.8	25.0	32.4	41.8	49.9	57.5	65.0	—	—	—	—	—	—	—	70.5	.0175	.0623
240	.091 .750	07.3	14.5	21.7	29.4	36.7	44.0	50.6	56.6	63.1	—	—	—	—	—	—	66.5	.0194	.0682
263	.088 .750	10.6	18.3	26.6	34.4	42.1	49.3	57.5	—	—	—	—	—	—	—	—	62.5	.0155	.0680
AVERAGE STRESS		9.1	17.6	26.3													57.5	.0144	
STANDARD DEVIATION STRESS		1.46	2.16	3.03													11.56	.00362	
AVERAGE STRESS-3σ		4.5	11.1	17.2													22.8	.0036	

FOOTNOTES: (I) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-19 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING					TEST COND.					RESIN CONT.			NOMINAL PER PLY THICKNESS		
S/N 7, S/N 10, S/N 11	COMPRESSION	0°				95% RH @ 125°F FOR 42 DAYS					25°F FOR 30 MIN					31.0%					
STRAIN IN / IN		002	004	005	008	010	012	014	016	018	020	022	024	026	028	030					
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
S/N 7 70	.068 .751	08.2	14.8	25.0	32.6	41.0	48.9	56.5	—								62.3	.0153	.0610		
74	.075 .751	07.6	16.4	22.0	27.0	32.6	37.8	43.9	50.2	57.0	—						58.8	.0186	.0624		
77	.069 .750	09.1	17.6	26.4	34.4	43.1	51.6	—									58.0	.0276	.0517		
78	.068 .749	07.9	15.9	23.6	30.2	35.9	44.2	53.1	—								57.5	.0151	.0508		
79	.068 .748	08.0	17.8	28.0	36.3	44.8	52.5	—									58.0	.0136	.0509		
S/N 10 211	.095 .750	09.1	19.7	27.8	37.0	—											40.6	.0090	.0712		
226	.094 .750	08.6	17.0	25.3	33.8	42.0	—										49.2	.0118	.0705		
S/N 11 209	.090 .750	09.1	18.9	27.8	—												36.2	.0080	.0675		
256	.088 .750	07.5	15.8	25.0	34.2	42.6	51.1	—									56.5	.0132	.0660		
276	.094 .750	08.5	18.1	—													33.1	.0056	.0705		
AVERAGE STRESS		8.3	17.1														50.9	.0138			
STANDARD DEVIATION STRESS		.61	1.36														10.28	.00623			
AVERAGE STRESS-3σ		6.5	13.1														20.1				

FOOTNOTES (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I). CURVE IDEALIZED

TABLE - AII-20 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.	NOMINAL PER PLY THICKNESS								
S/N7,S/N10,S/N11	COMPRESSION	90°	95% RH @ 125°F For 42 Days				25°F For 30 Min				31.0	.0088								
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
SN 7 88	.069	.748	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
91	.069	.752	07.6	16.0	24.1	31.8	39.2	46.1	—									49.3	.0131	.0619
93	.068	.750	08.6	16.2	26.0	33.6	41.1	50.4	—									50.8	.0122	.0510
95	.067	.751	07.2	18.2	27.4	36.4	39.8	—										41.0	.0130	.0604
100	.068	.751	07.5	16.0	25.0	33.8	42.9	51.5	—									53.8	.0107	.0611
S/N 11 212	.086	.749	09.3	18.6	26.4	34.8	41.4	—										42.1	.0104	.0646
259	.088	.749	08.2	19.3	31.1	42.0	—											46.5	.0086	.0660
274	.090	.750	08.6	17.4	26.2	36.0	44.5	—										46.2	.0101	.0675
S/N 10 231	.093	.753	07.4	15.2	22.6	30.9	38.4	46.5	—									46.5	.0126	.0700
237	.094	.751	07.8	17.0	26.9	35.9	—											36.3	.0162	.0705
AVERAGE STRESS			8.0	17.1	25.9	34.6												46.4	.0119	
STANDARD DEVIATION STRESS			0.67	1.27	2.36	3.14												5.09	.00194	
AVERAGE STRESS-3σ			6.0	13.3	18.8	25.2												30.1	.0061	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-21 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.						RESIN CONT.				NOMINAL PER PLY THICKNESS		
S/N7,S/N10,S/N11	COMPRESSION	0°	95% RH @ 126°F For 42 Days								RT						.1.0%				.0090		
STRAIN IN./IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN.²				
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																				
S/N7	.64	.073	.750	07.5	15.6	24.1	30.9	38.4	45.0	50.8	—						54.4	.0149	.0547				
	.65	.074	.750	07.7	15.1	22.7	27.2	33.2	39.4	45.6	—						52.1	.0158	.0555				
	.66	.073	.750	07.9	15.5	22.6	30.4	37.5	44.4	51.5	—						53.0	.0145	.0547				
	.67	.073	.750	08.8	17.6	25.7	33.7	41.5	48.8	56.2	—						58.5	.0148	.0547				
	.68	.073	.751	07.0	14.2	21.4	29.3	36.8	43.5	50.5	—						50.1	.0141	.0549				
	.69	.076	.750	08.8	18.7	28.0	36.8	46.5	53.3	60.5	—						61.3	.0144	.0570				
	.86	.071	.750	08.0	16.2	25.5	39.6	52.0	—								59.8	.0120	.0532				
	180A	.069	.751	16.7	30.7	41.5	47.6	53.6	59.4	—							59.5	.0126	.0520				
	181	.074	.751	09.0	14.6	31.0	41.1	51.5	59.8								61.9	.0125	.0556				
	186A	.071	.750	09.2	17.6	25.6	33.4	40.4	47.7	56.7							58.0	.0154	.0547				
AVERAGE STRESS																							
STANDARD DEVIATION STRESS																							
AVERAGE STRESS-3σ																							

DATA CONTINUED ON NEXT PAGE

FOOTNOTES (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-21 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

DATA CONTINUED FROM PREVIOUS PAGE																					
PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N7,S/N10,S/N11	COMPRESSION	0°				95% RH @125°F For 42 Days				RT				31.0%				.0090			
STRAIN IN/IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030					
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
S/N11	.085 .751	08.9	22.4	34.9	48.6	—											49.4	.0085	.0638		
233	.091 .750	08.6	17.3	26.2	34.5	—											40.0	.0085	.0683		
258	.086 .751	08.1	16.4	24.8	33.0	41.6	49.1	57.8	—								59.7	.0152	.0660		
266	.088 .750	07.9	15.6	23.4	31.4	39.3	47.0	54.6	—								53.6	.0160	.0660		
268	.089 .750	08.9	17.7	27.5	36.7	—											43.1	.0097	.0667		
270	.089 .750	10.4	19.4	29.8	37.8	46.3	54.7	—									59.8	.0134	.0667		
S/N10	.088 .751	08.2	16.2	23.8	32.0	39.6	46.6	53.6	57.1	61.5							63.9	.0192	.0660		
185	.087 .751	10.1	19.4	30.8	—												39.4	.0078	.0663		
218	.091 .749	06.5	13.9	21.7	30.1	38.6	46.6	—									51.4	.0136	.0681		
230	.093 .750	07.6	15.5	25.8	35.7	46.6	54.0	—									54.9	.0126	.0698		
AVERAGE STRESS		8.4	17.5	26.8													54.4	.0133			
STANDARD DEVIATION STRESS		2.6	3.7	3.9													7.04	.00279			
AVERAGE STRESS-3σ		1.9	8.4	15.1													33.3	.0060			

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
(C) CURVE EXCEEDED THE GRAPH PAPER
(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
(I) CURVE IDEALIZED

TABLE - AII-22 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.	RESIN CONT						NOMINAL PER PLY THICKNESS			
S/N7,S/N10,S/N11	COMPRESSION	90°	95% RH @ 125°F For 42 Days								RT	31.0%						.0090			
STRAIN IN /IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA $\frac{IN^2}{IN}$		
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																		
S/N7	3	.073	.750	17.0	31.8	39.0	42.1	44.7	-	-	-	-	-	-	-	-	48.0	.0120	.0547		
	10	.074	.750	11.9	21.0	29.5	36.2	43.0	-	-	-	-	-	-	-	-	45.0	.0109	.0555		
	14	.075	.750	12.0	23.6	33.1	42.1	-	-	-	-	-	-	-	-	-	47.7	.0097	.0562		
	15	.075	.750	11.5	23.2	34.6	45.0	-	-	-	-	-	-	-	-	-	46.2	.0083	.0562		
	19	.071	.750	12.4	20.9	28.1	35.0	42.3	46.5	-	-	-	-	-	-	-	47.3	.0122	.0532		
	21	.073	.747	07.7	15.3	22.9	30.0	38.6	45.7	-	-	-	-	-	-	-	48.4	.0134	.0545		
	22	.073	.751	08.4	19.7	29.0	37.7	46.0	-	-	-	-	-	-	-	-	47.5	.0106	.0550		
	23	.068	.751	08.3	22.1	32.9	44.1	-	-	-	-	-	-	-	-	-	47.4	.0089	.0510		
	25	.075	.751	12.1	23.2	34.0	-	-	-	-	-	-	-	-	-	-	42.7	.0078	.0564		
	29	.076	.751	12.0	24.0	34.2	43.7	-	-	-	-	-	-	-	-	-	44.2	.0082	.0570		
AVERAGE STRESS																					
STANDARD DEVIATION STRESS																					
AVERAGE STRESS-3σ																					
DATA CONTINUED ON NEXT PAGE																					

FOOTNOTES (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-22 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING						TEST COND.		RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N7 S/N10 S/N11	COMPRESSION	90°				95% RH @ 125°F For 42 Days						RT		31.0%				.0090			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
SPEC NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - 1034																			
S/N 11 217	.086 .749	7.5	15.3	23.5	31.4	38.5	46.5	—									49.9	.0133	.0646		
225	.054 .750	8.9	18.7	32.9	44.3	53.1	—										55.8	.0109	.0630		
228	.086 .746	08.4	18.3	28.2	38.9	46.6	—										48.9	.0106	.0642		
238	.089 .749	08.1	16.2	24.2	31.8	39.4	46.7	—									51.7	.0146	.0666		
262	.089 .753	08.1	15.2	22.8	30.9	38.4	44.3	—									42.3	.0140	.0670		
264	.088 .749	08.2	16.6	24.1	31.1	39.4	—										54.6	.0137	.0659		
272	.088 .752	07.9	16.4	25.6	33.3	—											38.7	.0100	.0666		
S/N10 240	.091 .750	08.3	12.0	27.5	38.2	—											42.0	.0097	.0881		
243	.091 .751	07.9	16.9	27.5	38.3	47.3	54.4	—									56.1	.0131	.0883		
246	.092 .750	10.9	22.2	32.6	43.0	—											43.9	.0088	.0689		
AVERAGE STRESS		9.9	19.6	29.3													47.3	.0110			
STANDARD DEVIATION STRESS		2.46	4.39	4.62													4.73	.00213			
AVERAGE STRESS-3σ		2.5	6.4	15.4													33.1	.0046			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-23 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N10	COMPRESSION	0°	None				160°F For 30 Min				31.0%								
STRAIN IN / IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRA'N AT MAX STRESS	AREA IN. 2
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
172Y	.088 .749	06.8	13.4	19.9	26.4	33.6	39.5	46.5	-								48.5	.0141	.0659
176Y	.087 .748	07.4	13.9	20.9	27.7	30.0	31.7	34.2	36.4	37.8	39.7	41.5	43.4	45.3	-		46.4	.0272	.0650
177Z	.088 .748	10.3	17.0	24.4	32.4	39.2	46.7										52.9	.0136	.0658
186	.088 .748	07.3	14.1	20.6	27.3	35.8	38.4	44.6	-								48.3	.0149	.0658
190Y	.082 .748	06.7	12.7	20.2	28.3	36.6	42.1	-									46.7	.0136	.0688
194Y	.093 .750	07.7	15.2	22.6	31.0	37.6	44.6	-									48.6	.0134	.0688
209	.081 .748	08.9	19.1	27.0	35.4	43.6	51.1	-									52.5	.0122	.0806
218	.094 .748	07.7	15.1	22.8	29.8	36.7	43.5	50.0	-								54.1	.0151	.0703
223	.090 .748	08.0	15.5	24.1	31.6	38.8	46.4	52.8	-								56.5	.0146	.0673
228	.094 .749	09.4	17.9	25.6	33.3	40.1	46.6										53.6	.0139	.0704
AVERAGE STRESS		8.0	15.4	22.8	30.3	37.2	43.1										50.6	.0152	
STANDARD DEVIATION STRESS		1.04	1.41	2.56	2.94	3.70	5.70										3.72	.000436	
AVERAGE STRESS-3σ		4.9	11.2	15.1	21.5	26.1	26.0										39.4	.0021	

FOOTNOTES

(1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(II) CURVE IDEALIZED

TABLE - AII-24 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING					TEST COND.					RESIN CONT.	NOMINAL PER PLY THICKNESS					
S/N10	COMPRESSION	90°	None					160°F For 30 Min					31.0%	.0091					
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
180Y	.086 .746	08.9	17.7	25.8	33.0	39.2	-										42.4	.0110	.0844
182Y	.092 .749	07.9	15.7	26.3	36.6	-											41.7	.0096	.0889
184Y	.095 .749	05.9	11.1	16.9	22.6	27.9	33.0	-									37.3	.0140	.0710
195	.090 .74	06.6	11.6	18.7	26.8	32.5	36.8	38.0	-								39.0	.0147	.0874
200Z	.091 .750	06.5	11.3	17.8	24.5	31.2	37.0	-									41.7	.0139	.0883
203	.091 .750	06.8	11.7	19.2	31.4	-											38.6	.0096	.0883
206	.090 .748	06.0	12.5	22.3	33.6	39.6	-										44.9	.0115	.0873
249	.094 .748	08.1	12.0	18.4	26.6	33.0	41.0	-									48.0	.0134	.0703
182Z	.092 .749	07.1	14.4	21.7	29.0	34.5	37.3	40.3	44.6								46.4	.0162	.0674
186Z	.091 .748	05.3	11.2	16.9	21.8	24.7	29.6	36.7	41.5	-							43.5	.0164	.0880
AVERAGE STRESS		6.4	12.9	20.4	28.4												42.2	.0130	
STANDARD DEVIATION STRESS		1.18	2.26	3.48	4.83												3.34	.00260	
AVERAGE STRESS-3σ		2.9	6.1	10.0	13.9												32.2	.006	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-25 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND	RESIN CONT	NOMINAL PER PLY THICKNESS													
S/N 7, 10, 11	COMPRESSION	0°	95% R.H. @ 125°F For 42 Days	160°F For 10 Min	31.0%	.0081													
STRAIN IN IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN ²
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																
S/N 7	174A	.075	.750																
	175	.068	.750	13.0	22.0	29.7	36A	43.2	-								47.6	.0115	.0563
	177A	.073	.751	13.0	27.0	29.4	-										48.7	.0075	.0510
	178	.073	.750	08.8	16.8	22.6	29.6	36.7	42.9	-							45.3	.0128	.0548
	183A	.071	.749	12.6	24.5	35.1	46.1										49.9	.0088	.0547
	184	.074	.749	13.3	28.0	39.6											48.4	.0078	.0532
	187	.072	.750	11.7	23.4	33.3	43.4										51.6	.0088	.0540
	189A	.078	.750	10.0	25.6	38.9	-										48.2	.0078	.0540
	190	.072	.749	12.3	25.2	38.7	48.4	-									49.1	.0082	.0585
	191	.069	.749	11.8	25.8	34.3	37.0	40.4	43.4	46.1	48.1	-					48.6	.0163	.0540
AVERAGE STRESS				14.7	25.2	34.7	-										42.0	.0080	.0571
STANDARD DEVIATION STRESS																			
AVERAGE STRESS-30°																			

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-26 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOR WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSUMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AII-26 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT				NOMINAL PER PLY THICKNESS				
S/N7,S/N10,S/N11	COMPRESSION	90°	95% RH @ 125°F For 42 Days				160°F For 10 Min				31.0%								
STRAIN IN/IN		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																
S/N7	2	.075	.750	06.6	13.7	20.2	25.6	30.2	34.7	-							36.6	.0126	.0663
	6	.075	.750	09.6	18.1	25.6	32.4	-									37.2	.0095	.0663
	8	.074	.750	06.5	13.3	19.6	26.5	33.4	-								37.0	.0114	.0665
	15	.075	.750	08.5	16.0	23.1	29.2	-									34.2	.0096	.0663
	18	.074	.751	06.5	12.6	18.6	24.2	28.5	33.0	37.3							38.6	.0144	.0655
	30	.076	.751	08.4	16.8	22.8	28.4	34.2	-								38.1	.0119	.0670
	51	.068	.749	14.8	26.6	35.4	-										39.0	.0071	.0609
	57	.068	.751	15.3	28.6	39.2	-										41.1	.0066	.0611
	60	.067	.751	07.8	15.7	22.6	28.8	34.2	-								36.2	.0106	.0604
	62	.066	.749	12.9	8.48	34.0	-										38.0	.0070	.0494
AVERAGE STRESS																			
STANDARD DEVIATION STRESS																			
AVERAGE STRESS-3σ																			

FOOTNOTES (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-28 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS					
S/N7 S/N10 S/N11	COMPRESSION	90°	95% RH @ 125°F For 42 Days				160°F For 10 Min				31.0%									
STRAIN IN./IN.		STRESS - KSI																		
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
S/N10	190	.088	.751	07.7	15.9	23.2	30.3											35.6	.0089	.0860
	232	.089	.751	08.5	17.5	26.0	34.1											39.0	.0098	.0869
	234	.090	.752	10.2	19.9	28.8	-											33.5	.0074	.0676
	236	.089	.748	07.5	16.3	24.8	32.8	-										27.0	.0098	.0867
	341	.091	.749	07.9	16.4	25.0	32.9	44.6	-									46.7	.0137	.0681
	246	.089	.750	08.1	17.9	27.0	36.0	-										42.4	.0096	.0867
S/N11	214	.086	.750	08.7	19.6	29.8	39.6	-										46.5	.0096	.0846
	226	.084	.750	07.3	16.5	25.4	33.0	-										33.3	.0083	.0630
	280	.087	.750	10.6	20.9	31.9	39.9	-										41.3	.0086	.0652
	273	.088	.750	08.6	18.6	27.7	36.8	46.0	-									46.0	.0106	.0680
AVERAGE STRESS			9.1	18.2	26.5													38.7	.0099	
STANDARD DEVIATION STRESS			2.54	18.2	5.40													4.18	.00221	
AVERAGE STRESS-3σ			1.5	6.0	10.3													26.1	.0033	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-27 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC CONDITIONING								TEST COND.	RESIN CONT	NOMINAL PER PLY THICKNESS			
S/N10	COMPRESSION	0°	100 Hrs @ 400°F								400°F For 30 Min	31.0%				
STRAIN IN / IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI														
S/N 10 171Z	.089 .748	06.9	13.1	19.7	26.2	34.0	-									33.6
176Z	.089 .748	07.2	14.0	20.8	27.1	33.2	-									34.3
179	.086 .749	07.5	14.7	22.8	-	-	-									28.0
182	.088 .748	08.2	16.6	22.6	29.2	36.8	-									37.8
182	.088 .747	09.6	19.0	-												25.8
192Y	.093 .749	07.5	14.4	20.8	26.8	33.0	39.1									46.6
210	.082 .748	06.1	14.2	21.0	28.8	-										30.6
213	.093 .748	07.3	14.4	21.0	27.2	-										29.5
219	.092 .748	07.4	15.3	22.1	28.0	34.4	-									37.1
224	.090 .748	06.6	10.9	17.4	24.7	-										26.2
AVERAGE STRESS		7.3	14.7													32.8
STANDARD DEVIATION STRESS		1.09	2.17													6.04
AVERAGE STRESS-3σ		4.0	8.2													14.7

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-28 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING					TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS				
S/N10,S/N7	COMPRESSION	90°	400 Hrs @ 400°F					400°F For 30 Min					31.0%									
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²			
SPEC. NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																				
SN/7 5	.072 .752	05.0	07.2	09.4	11.7	13.7	15.4	—									15.4	.0123	.0641			
11	.074 .750	05.7	11.4	16.8	—												19.9	.0078	.0656			
24	.073 .750	05.1	11.0	16.1	—												20.3	.0080	.0647			
27	.075 .751	09.1	—														15.1	.0036	.0664			
31	.076 .750	08.6	13.0	—													16.3	.0052	.0570			
37	.072 .749	08.5	13.5	—													19.3	.0059	.0539			
43	.075 .750	05.3	10.9	16.2	—												19.3	.0071	.0562			
44	.078 .750	03.9	10.2	15.4	—												19.9	.0080	.0640			
47	.075 .750	04.6	09.8	15.8	20.2												21.3	.0082	.0662			
52	.068 .749	06.5	12.6	18.3	23.8	—											24.6	.0088	.0609			
AVERAGE STRESS									DATA CONTINUED ON NEXT PAGE													
STANDARD DEVIATION STRESS																						
AVERAGE STRESS-3σ																						

DATA CONTINUED ON NEXT PAGE

FOOTNOTES (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AII-28 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS					
S/N10,S/N 7	COMPRESSION	90°	400 Hrs @ 400°F								400°F For 30 Min				31.0%									
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS				STRAIN AT MAX STRESS		AREA IN.²	
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KCI																						
S/N10 180Z	.088 .749	06.4	12.8	18.4	25.5	-											28.2	.0089		.0659				
181Z	.086 .750	06.2	12.6	18.8	24.8	30.2	-										32.6	.0103		.0846				
183Y	.091 .750	06.7	⁽¹⁾ 12.9	⁽¹⁾ 18.9	⁽¹⁾ 24.6	29.3	350	406									43.9	.0153		.0683				
184Z	.094 .749	07.0	13.5	19.4	25.0	-											29.2	.0095		.0704				
191	.090 .748	08.0	17.5	-													20.1	.0048		.0673				
198	.088 .749	06.4	12.8	19.1	24.6	30.1											32.5	.0113		.0659				
200Y	.091 .750	09.8	19.8	30.0	-												34.9	.0099		.0683				
202Z	.091 .749	07.5	15.0	22.0	24.6	35.0											39.6	.0114		.0681				
205	.087 .749	07.8	14.5	21.2	27.6	-											33.4	.0099		.0651				
242	.091 .750	06.6	12.5	18.7	24.6	30.8											31.2	.0101		.0682				
AVERAGE STRESS		6.1															25.8	.0087						
STANDARD DEVIATION STRESS		1.58															8.27	.00278						
AVERAGE STRESS-3σ		1.4															1.0	.0006						

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AII-29 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS				
S/N 7, S/N 13	PANEL SHEAR	0/90	NONE										-65° F FOR 30 MIN.	31.0%					
STRAIN - IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
S/N 7-2	.089 3.875	07.9	14.0	17.2	A												21.6	A	.268
7A	.088 3.875	08.6	14.2	16.6	A												17.9	A	.264
8A	.072 3.875	07.9	13.7	17.3	A												19.0	A	.279
1	.076 3.875	08.0	13.4	17.3	19.4	A											19.7	A	.291
S/N 10-42	.082 3.875	07.7	13.7	16.9	18.2	19.4	20.0	20.8	21.4	22.0	22.8	A					24.4	A	.318
S/N 11-24	.090 3.875	08.5	11.6	15.0	17.0	18.4	19.3	20.0	20.5	20.8	20.9						20.9	.0416	.349
42	.089 3.875	07.6	12.7	15.7	17.2	18.0	18.3	18.6									18.7	.0300	.346
11	.088 3.875	08.1	13.5	16.4	17.6	18.3	18.8	19.1	19.9	20.0	20.0	20.0	2.00	-			20.0	.0612	.333
31	.086 3.875	0.1 12.9	(1) 16.1	(1) 17.8	(1) 18.8	(1) 19.4	(1) 19.7										(1) 20.1	.0304	.333
36	.087 3.875	(1) 07.4	13.6	17.7	20.4	22.1	23.1	23.8									24.0	.0294	.337
AVERAGE APPARENT STRESS																			
STANDARD DEVIATION APPARENT STRESS																			
AVERAGE APPARENT STRESS - 3σ																			
*(.08) x (AVERAGE APPARENT STRESS)																			
*(.08) x (AVERAGE APPARENT STRESS - 3σ)																			

DATA CONTINUED ON NEXT PAGE

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AII-29 REDUCED TEST DATA
DATA CONTINUED FROM PREVIOUS PAGE

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

- THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AII-30 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

• THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AII-31 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING										TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS	
S/N 10	PANEL SHEAR	0/90											RT					31.0%						
STRAIN IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2					
SPEC. NO	T ⁽¹⁾ % ⁽¹⁾	STRESS - KSI																						
S/N 10 - 11	.006	3.875	06.8	10.1	12.6	14.1	A										16.0	A	.372					
15	.088	3.875	06.2	10.4	12.8	14.0	A										15.6	A	.341					
16	.069	3.875	03.0	10.5	12.8	14.0	A										15.4	A	.344					
24	.087	3.875	06.5	10.7	12.8	13.9	A										15.7	A	.336					
26	.069	3.875	06.2	10.3	12.6	A											15.5	A	.344					
31	.087	3.875	06.5	10.0	13.0	14.6	A										15.6	A	.376					
38	.082	3.875	06.4	10.6	12.9	A											15.6	A	.366					
10	.082	3.875	06.6	11.1	13.7	15.4	A										17.1	A	.366					
17	.081	3.875	06.4	10.6	12.7	A											15.2	A	.362					
30	.087	3.875	06.9	11.8	14.7	16.4	A										17.3	A	.337					
AVERAGE APPARENT STRESS			06.3	10.6	13.1	14.8											15.9							
STANDARD DEVIATION APPARENT STRESS			.41	.5	.53	1.11											.72							
AVERAGE APPARENT STRESS - 3σ			4.0	9.1	11.5	11.5											13.8							
*(.88) x (AVERAGE APPARENT STRESS)			5.6	9.3	11.5	13.0											14.0							
*(.88) x (AVERAGE APPARENT STRESS - 3 σ)			3.5	8.0	10.1	10.1											12.1							

FOOTNOTES

(1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE -AII-32 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITION ^a -G								TEST COND.	RESIN CONT.						NOMINAL PER PLY THICKNESS	
S/N 10, S/N 11	PANEL SHEAR	0/90	NONE								100° F FOR 30 MIN.	31.0%							
STRAIN IN./IN.		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
S/N 10-12	.004 3.875	05.2	08.6	10.5	12.0	13.1	14.8	A									14.8	A	.364
19	.004 3.875	04.5	07.6	09.5	10.8	11.8	12.2	A									12.7	A	.364
34	.004 3.875	05.6	09.2	11.6	13.4												13.9	A	.360
37	.004 3.875	05.2	08.5	10.5	11.9	12.1	A										13.3	A	.364
9	.004 3.875	04.9	08.5	10.9	13.4												14.4	C	.364
20	.004 3.875	04.9	08.2	10.2	11.5	12.2											13.7	A	.346
32	.003 3.875	04.8	08.5	11.0	12.8	13.4	A										14.6	A	.360
33	.002 3.875	05.0	08.7	11.0	12.5	13.3	A										14.2	A	.366
S/N 11-12	.005 3.875	05.1	08.2	10.1	11.2	11.9	12.5	12.8	12.9	12.9	13.0	13.0					13.1	.0432	.329
18	.005 3.875	05.5	08.5	09.9	11.0	11.3	11.4	11.8	11.8	12.0	12.3						12.4	.0472	.329
AVERAGE APPARENT STRESS		05.1	08.4	10.5	12.0												13.7		
STANDARD DEVIATION APPARENT STRESS		.32	.41	.52	.84												.82		
AVERAGE APPARENT STRESS - 3σ		4.1	7.2	8.6	9.5												11.2		
*(.88) x (AVERAGE APPARENT STRESS)		4.5	7.4	9.2	11.6												12.1		
*(.88) x (AVERAGE APPARENT STRESS - 3σ)		3.6	5.3	7.6	8.4												9.9		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AII-33 REDUCED TEST DATA

[illegible]

FOOTNOTES

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(ID) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AII-34 REDUCED TEST DATA

[illegible]

FOOTNOTES. (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(9) CURVE IDEALIZED

- THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

[illegible]

MATERIAL IDENTIFICATION:

STRAIN GAGE FACTOR: 2.10
STRAIN GAGE RESISTANCE: 360
EXTENSOMETER: S-400-2A8

FILA ORIENT

RESIN CONT.

PANEL

00

[illegible]

TABLE - AII-36 POISSONS RATIO FROM TENSION TESTS

DATE: 11-15-08

MATERIAL IDENTIFICATION:

STRAIN GAGE FACTOR: 2.10
STRAIN GAGE RESISTANCE: 360
EXTENSOMETER: S-400-2AB

FILA. ORIENT.

SiWi7

31.0%

80

[illegible]

DATE: 11-14-68

MATERIAL IDENTIFICATION:

PANEL RESIN CONT. FILA. ORIENT.

STRAIN GAGE FACTOR: 2.10
STRAIN GAGE RESISTANCE: 350
EXTENSOMETER: S-400-2AB

TABLE - AII-38 POISSONS RATIO FROM TENSION TESTS

S/N10 31.0% 90°

SPEC IDEN.	TEST COND.	WIDTH (IN.)	THICK (IN.)	AREA (SQ. IN.)	LOAD (LBS.)	STRESS (KSI)	STRAIN TRANS. (IN./IN.)	STRAIN LONG. (IN./IN.)	POISSON'S RATIO (μ)	MODULUS $E \times 10^6$ (PSI)	REMARKS
S/N10 - 36	RT	1.251	.089	.1112	0	0	-	-	-	-	4750 LBS CUTOFF
					1112	10	.000370	.00280	.1321		
					2224	20	.000644	.00630	.1021		
					3336	30	.000842	.01020	.0825		
					4448	40	.001004	.01450	.0893		
					4590	42.7	.001016	.01490	.0873		
S/N10 - 36	RT	1.252	.089	.1115	0	0	-	-	-	-	4900 LBS CUTOFF
					1115	10	.000316	.00330	.0868		
					2230	20	.000610	.00840	.0863		
					3345	30	.000890	.00980	.0807		
					4480	40	.001080	.01360	.0794		
					4900	44.0	.001104	.01510	.0732		

TABLE - AIII-1 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 14	TENSION	0°				-65°F FOR 1 HR				-65°F FOR 30 MINS				35.6%				.0106			
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030		MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²	
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
147	.083 .406	04.4	10.5	16.3	21.9	27.0	31.8	36.8	41.6	47.0	50.5	55.0	59.1	67.1	75.5	80.5	84.0	.0380	.0411		
148	.083 .407	06.5	11.6	17.0	22.8	27.8	32.7	37.0	42.1	46.7	51.1	55.7	60.0	61.8	69.0	75.4	76.8	.0332	.0413		
149	.083 .407	08.5	16.0	20.1	26.4	30.3	35.8	41.1	47.0	52.0	57.5	62.5	67.7	73.0	78.9	84.3	87.5	.0320	.0413		
151	.083 .406	08.0	15.6	19.5	24.3	30.2	35.5	41.3	46.1	51.9	57.1	62.0	67.0	72.5	77.0	81.0	85.0	.0314	.0411		
153	.086 .404	07.8	15.0	19.5	24.2	29.8	35.0	40.3	45.5	50.5	55.2	60.0	65.0	69.7	74.3	82.5	84.3	.0326	.0420		
155	.086 .406	08.0	15.4	19.7	24.7	29.4	34.9	40.1	45.4	50.2	55.2	60.0	65.0	69.7	74.3	82.9	86.1	.0326	.0421		
156	.084 .407	02.7	15.4	19.5	24.2	29.8	34.8	40.0	45.4	50.4	55.9	60.6	65.6	70.5	75.4	83.7	86.0	.0329	.0417		
158	.086 .406	08.1	15.4	19.2	24.5	29.5	34.4	39.2	44.6	49.6	54.7	59.4	64.1	69.0	73.5	81.6	82.8	.0321	.0421		
161	.086 .406	08.8	16.4	20.2	25.0	30.4	35.4	40.4	45.9	50.8	55.5	60.4	65.4	70.4	75.0	83.0	83.0	.0321 ⁽¹⁾	.0421		
162	.087 .403	08.3	15.4	19.6	24.4	29.3	35.2	40.1	45.4	50.5	55.5	60.2	65.0	69.7	74.1	81.7	84.5	.0330	.0424		
AVERAGE STRESS		7.6	15.7	19.1	24.2	29.4	34.5	39.6	44.9	49.9	54.8	59.6	64.4	69.6	73.9	78.3	83.3	.0330			
STANDARD DEVIATION STRESS		1.28	2.24	1.31	1.06	1.10	1.34	1.55	1.72	1.78	2.29	2.45	2.76	3.87	3.48	3.78	2.86	.00184			
AVERAGE STRESS-30°		4.8	8.0	15.2	21.0	28.1	30.5	35.0	39.7	44.7	47.9	52.2	50.1	58.0	63.5	67.1	75.3	.0275			

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

NOTE: • SPLIT BOXES READ FROM UPPER LEFT TO LOWER RIGHT. TO NEXT BOX, IN .002 INCREMENTS OF STRAIN STARTING WHERE BOXES BEGIN TO BE SPLIT.

TABLE - AIII-2 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CON'T.				NOMINAL PER PLY THICKNESS			
S/N 16	TENSION	90°	-65°F FOR 1 HR								-65°F FOR 30 MINS				35.6%				.0101			
STRAIN - IN./IN.		STRESS - KSI																				
SPEC. NO	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
25	.080	.498	08.8	15.1	18.9	23.9	28.4	33.2	37.9	42.8	47.5	52.0	56.5	61.0	65.4	70.3	-	72.5	.0291	.0398		
26	.080	.497	08.8	15.3	18.9	23.9	28.4	32.9	37.7	42.8	42.2	52.0	56.8	61.5	65.8	70.2	-	71.5	.0287	.0398		
27	.080	.497	08.3	14.6	18.3	23.1	28.2	32.7	37.4	42.0	46.7	51.5	56.0	60.4	64.8	69.0	-	70.5	.0296	.0398		
28	.080	.497	08.8	15.0	18.3	23.6	28.7	33.2	37.7	42.7	47.8	52.5	56.8	61.5	65.9	70.4	73.9	71.6	.0302	.0398		
30	.080	.498	07.8	14.6	18.3	22.8	27.6	32.6	37.7	42.1	46.7	51.5	56.0	60.0	64.0	68.3	-	69.4	.0283	.0398		
31	.083	.497	08.2	14.5	18.2	23.0	27.6	32.2	36.8	41.6	46.0	50.5	54.8	59.5	-	-	-	62.8	.0256	.0413		
33	.080	.498	08.6	15.0	18.6	23.2	27.6	32.2	37.4	42.2	46.8	51.3	55.9	60.4	64.9	69.1	-	73.6	.0298	.0398		
35	.083	.497	07.2	14.0	17.4	21.8	26.4	30.8	35.8	40.7	45.0	49.5	54.3	58.0	62.6	-	-	65.1	.0269	.0413		
36	.082	.497	07.9	14.7	18.2	22.6	26.8	31.8	36.4	41.3	45.8	50.1	54.5	59.0	-	-	-	61.5	.0246	.0407		
41	.082	.496	08.5	14.2	19.2	23.2	27.8	32.2	36.9	41.3	46.0	50.6	55.0	59.5	63.5	-	-	68.4	.0279	.0407		
AVERAGE STRESS			8.3	14.8	18.5	23.1	27.8	32.4	37.2	42.0	46.6	51.2	55.7	60.1	-	-	-	68.7	.0280	-		
STANDARD DEVIATION STRESS			.58	.37	.51	.63	.66	.72	.66	.72	.98	.92	.94	1.13	-	-	-	4.19	.00177	-		
AVERAGE STRESS-3σ			6.5	13.7	17.0	21.2	25.8	30.2	36.2	39.8	43.7	48.4	52.9	56.7	-	-	-	58.1	.0228	-		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-3 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING						TEST COND.						RESIN CONT.			NOMINAL PER PLY THICKNESS		
S/N 14	TENSION	0°	95% RH @ 125°F FOR 42 DAYS						-65°F FOR 30 MINS						35.6%			.0108		
STRAIN IN./IN.			.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA $\frac{1}{2}$ IN.
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
40	.084	.495	07.7	14.7	21.6	26.8	30.8	36.1	41.0	46.9	51.6	56.7	61.4	66.1	-	-	-	68.4	.0252	.0416
42	.086	.492	07.9	15.4	21.8	26.6	30.8	36.2	41.4	46.1	51.6	55.4	61.4	66.0	70.4	74.0	-	74.3	.0284	.0423
44	.085	.496	08.3	15.4	22.0	26.1	31.2	36.7	42.1	47.1	52.0	57.3	62.0	66.5	-	-	-	69.0	.0252	.0422
46	.084	.494	07.9	15.7	22.4	26.3	31.3	36.4	42.1	47.5	53.0	57.8	62.4	67.0	70.0	-	-	70.5	.0264	.0415
48	.084	.497	07.2	15.1	21.6	26.7	30.6	36.6	42.0	47.0	52.3	57.4	62.4	67.1	71.8	74.6	-	75.0	.0292	.0417
51	.085	.494	08.3	15.5	21.9	26.0	30.9	36.7	41.0	46.5	51.6	56.5	61.4	66.0	70.3	73.6	-	74.3	.0290	.0420
53	.082	.499	08.6	16.7	23.3	27.4	33.0	38.6	44.7	50.0	55.5	60.6	65.6	71.0	75.5	-	-	76.4	.0264	.0409
60	.084	.491	08.0	15.7	22.2	26.6	31.4	37.3	42.8	48.5	53.5	59.1	64.0	68.0	72.5	74.5	-	75.4	.0290	.0413
61	.084	.490	08.3	16.8	23.0	29.4	32.8	38.3	43.7	49.0	54.5	59.5	64.4	68.4	71.8	73.8	-	74.3	.0290	.0412
63	.086	.499	07.9	15.2	21.5	25.6	30.4	35.2	40.9	46.2	51.4	56.2	61.0	65.9	70.0	-	-	72.0	.0314	.0429
AVERAGE STRESS			08.0	15.6	22.1	26.2	31.3	36.7	42.1	47.5	52.7	57.6	62.6	67.2	-	-	-	73.0	.0279	
STANDARD DEVIATION STRESS			.39	.66	.61	.69	.89	1.03	1.26	1.29	1.40	1.61	1.54	1.59	-	-	-	2.89	.00023	
AVERAGE STRESS-3σ			6.8	13.6	20.3	24.1	28.6	33.6	38.3	43.6	48.5	52.8	58.0	63.4	-	-	-	64.3	.0210	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-4 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS			
S/N 14	TENSION	90°	95% RH @ 125°F FOR 42 DAYS								-65°F FOR 30 MINS	36.6%	.0104			
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI														
102	.083 .406	07.3	14.6	19.7	23.8	28.6	33.2	38.1	43.0	48.1	52.3	56.6	60.7	-	-	63.1
104	.082 .407	07.6	14.7	19.6	24.4	29.0	33.7	38.7	43.3	48.0	52.7	57.1	61.3	65.0	-	66.7
109	.083 .406	08.1	15.4	19.8	24.4	29.2	34.2	39.0	44.0	48.7	53.1	57.9	61.3	-	-	64.6
110	.081 .408	08.2	15.6	20.3	24.8	29.7	34.4	39.4	44.3	49.0	53.5	58.0	62.0	-	-	66.1
140	.084 .408	08.0	12.0	18.0	23.8	28.9	33.2	38.0	42.0	46.9	50.7	55.4	59.0	-	-	60.9
146	.083 .403	07.8	15.4	20.0	24.5	29.4	34.0	38.2	44.0	48.7	52.9	57.5	61.2	64.5	-	64.8
92	.084 .407	08.0	15.2	20.5	24.4	29.0	33.8	38.7	43.5	48.1	52.0	56.8	60.4	64.0	-	64.8
96	.081 .405	07.2	14.5	19.3	23.6	28.2	32.3	37.4	42.2	46.8	51.0	55.5	59.4	-	-	61.6
97	.084 .403	07.3	14.5	19.3	23.4	27.8	32.6	37.0	41.8	46.2	50.8	55.0	58.8	-	-	61.6
77	.081 .406	08.7	15.9	20.4	24.9	29.9	34.8	39.4	44.4	49.1	54.1	58.5	62.8	66.3	-	66.6
AVERAGE STRESS		7.5	14.9	19.7	24.2	28.9	33.7	38.5	43.2	48.0	52.3	56.8	60.7	-	-	63.9
STANDARD DEVIATION STRESS		.75	1.10	.73	.51	.95	.71	.84	.97	.99	1.10	1.20	1.31	-	-	1.61
AVERAGE STRESS-3σ		6.3	11.6	17.5	22.7	28.9	31.6	38.0	47.3	45.0	49.0	53.2	58.8	-	-	59.1

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-5 REDUCED TEST DATA

[illegible]

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - A111-6 REDUCED TEST DATA

[illegible]

FOOTNOTES. (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER - 1

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESS METER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AIII-7 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING					TEST COND				RESIN CONT				NOMINAL PER PLY THICKNESS		
S/N 14	TENSION	0°		95% RH @ 125°F FOR 42 DAYS					RT				35.6%				.0104		
STRAIN IN/IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030			
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
2	.083 .498	06.5	12.9	19.7	25.0	30.2	35.1	40.2	45.0	49.8	54.0						54.5	.0204	.0428
4	.086 .498	06.7	13.6	19.9	25.0	29.9	35.3	40.2	45.1	50.3	53.5						55.0	.0220	.0428
6	.085 .496	07.1	14.2	20.2	25.4	30.8	36.8	40.8	46.6	50.4							51.5	.0184	.0421
8	.085 .497	07.6	14.4	20.8	25.8	30.7	35.9	41.3	46.0	50.6	53.2						54.4	.0204	.0423
10	.074 .493	08.2	15.9	23.0	28.8	34.2	39.8	46.4	51.5	56.6	61.1						61.6	.0208	.0366
16	.084 .497	07.2	14.3	20.4	25.8	31.1	36.1	41.4	46.4	51.4	54.5						55.3	.0236	.0418
18	.083 .494	07.8	14.9	21.4	26.8	32.2	37.6	42.6	47.8	52.9	56.5						57.5	.0210	.0410
20	.084 .496	07.2	14.2	20.4	25.4	30.7	36.0	41.5	46.3	51.5	54.5						55.1	.0224	.0417
22	.083 .494	07.4	14.2	20.0	25.6	31.2	36.1	42.0	46.4	51.2	53.9						55.1	.0220	.0410
24	.083 .496	07.3	14.6	20.6	26.2	31.0	36.4	41.7	46.9	51.6							55.4	.0211	.0412
AVERAGE STRESS		07.3	14.3	20.6	26.0	31.2	36.4	41.8	46.7	51.6							55.5	.0212	
STANDARD DEVIATION STRESS		.50	.76	1.04	1.13	1.22	1.40	1.78	1.93	1.96							2.57	.00136	
AVERAGE STRESS-3σ		6.3	12.0	17.2	22.6	31.5	31.8	36.2	40.9	45.7							47.8	.0172	

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-8 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 14	TENSION	90°		95% RH @ 125°F FOR 42 DAYS								RT				35.6%				.0104			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS	AREA IN. 2			
SPEC. NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																					
79	.084 .493	06.4	13.1	18.4	23.1	27.6	32.6	37.2	41.8	46.0							48.5	.0192	.0414				
93	.085 .496	06.6	12.8	18.0	22.2	26.8	31.3	36.8	39.8								43.9	.0184	.0422				
98	.084 .486	07.1	13.6	19.2	23.5	28.2	32.8	37.4	41.7	46.0							49.4	.0198	.0417				
99	.084 .465	06.5	12.5	18.3	22.7	27.4	32.1	36.7	41.1	45.5							49.4	.0199 ⁽¹⁾	.0416				
101	.082 .496	06.9	13.5	19.1	23.6	28.4	33.2	38.0	42.5	47.0							50.2	.0197	.0407				
107	.082 .497	07.4	14.2	19.4	24.0	29.0	33.7	38.6	43.1	47.4							50.8	.0195	.0408				
112	.081 .495	06.6	12.9	19.0	24.3	29.2	34.0	38.8	43.4	47.9	52.0						52.0	.0204	.0401				
119	.084 .496	07.1	13.8	19.0	23.2	27.8	32.5	37.1	41.4	45.5	49.4						50.0	.0204	.0422				
141	.084 .496	06.4	12.8	18.4	22.8	27.4	32.1	36.8	41.1								44.8	.0177	.0422				
144	.084 .497	06.9	13.4	18.7	22.7	27.8	32.6	37.0	41.1	45.5							49.3	.0199	.0418				
AVERAGE STRESS		06.8	13.2	18.8	23.2	27.9	32.7	37.3	41.7								48.9	.0195					
STANDARD DEVIATION STRESS		.32	.43	.46	.65	.74	.79	.91	.91								2.67	.00086					
AVERAGE STRESS-3σ		5.8	11.9	17.4	21.3	25.7	30.3	34.6	39.0								40.9	.0169					

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-10 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 16	TENSION	90°				NONE				160°F FOR 30 MIN				35.6%				.0069			
STRAIN IN./IN.		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030					
SPEC. NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																			
2	.080 .496	07.5	13.4	18.7	22.7	27.4	32.2	36.8	41.5	47.1	50.4						51.0	.0203		.0387	
4	.080 .495	06.6	12.6	17.7	22.2	26.5	31.6	36.4	40.7	45.2	49.3						52.5	.0213		.0386	
6	.073 .495	07.4	13.6	18.7	23.3	28.0	33.2	37.8	42.5	47.2	51.2						54.3	.0214		.0386	
8	.080 .495	07.3	13.8	18.7	23.2	28.0	33.1	37.6	42.1	46.5							50.0	.0195		.0386	
10	.078 .496	07.3	13.9	18.5	23.3	28.0	33.2	37.8	42.7	47.2	51.5						55.6	.0218		.0386	
21	.077 .498	06.7	12.0	16.7	21.1	25.6	30.0	34.4	38.8	43.2	47.2	51.0					54.1	.0236		.0384	
22	.080 .495	05.8	11.6	16.2	20.2	24.5	28.8	33.1	37.4	41.5	45.5	49.4	53.0				53.5	.0243		.0386	
23	.075 .496	05.5	11.2	15.8	20.2	24.4	28.6	32.9	37.2	41.3							44.9	.0195		.0382	
24	.075 .498	06.3	12.1	17.2	20.8	24.8	29.2	33.6	37.6	41.6	45.5						48.7	.0215		.0384	
32	.080 .498	06.8	11.6	16.8	20.5	24.6	29.0	33.0	37.3	41.3	45.0	49.1	52.5				54.2	.0248		.0389	
AVERAGE STRESS		6.5	12.6	17.5	21.8	26.2	30.9	35.3	39.8	44.2							51.9	.0218			
STANDARD DEVIATION STRESS		79	1.02	1.11	1.32	1.56	1.96	2.13	2.34	2.66							3.25	.00186			
AVERAGE STRESS-3σ		4.1	9.8	14.2	17.8	21.5	25.0	28.9	32.8	36.2							42.1	.0162			

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-11 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING					TEST COND.					RESIN CONT.			NOMINAL PER PLY THICKNESS		
S/N 14	TENSION	0°			95% RH @ 125°F FOR 42 DAYS 160°F FOR 10: .N					35.6%								.0105		
	STRAIN IN./IN.	002	004	006	008	010	012	014	016	018	020	022	024	026	028	030				
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																		
1	.085 .497	06.4	12.7	18.7	24.4	29.8	35.0	39.8	-	-	-	-	-	-	-	-	-	.13	.0146	.0423
3	.034 .498	06.7	12.9	19.1	24.8	30.1	35.4	40.1	44.7	-	-	-	-	-	-	-	-	46.0	.0165	.0419
5	.083 .496	07.0	13.6	19.8	25.5	31.0	36.4	41.2	-	-	-	-	-	-	-	-	-	43.8	.0149	.0412
7	.089 .498	06.5	12.5	18.0	23.6	28.8	33.8	38.3	-	-	-	-	-	-	-	-	-	42.0	.0156	.0444
9	.083 .496	07.1	13.6	19.9	25.9	31.1	36.4	41.4	46.3	-	-	-	-	-	-	-	-	48.5	.0168	.0412
15	.082 .496	07.1	13.5	19.9	25.8	31.4	36.5	41.6	46.1	-	-	-	-	-	-	-	-	47.0	.0163	.0407
17	.084 .496	07.2	13.4	19.4	25.3	30.8	36.0	40.7	45.4	-	-	-	-	-	-	-	-	45.8	.0161	.0417
19	.084 .496	06.7	13.1	19.0	24.8	30.2	35.5	40.3	45.1	-	-	-	-	-	-	-	-	45.9	.0163	.0417
21	.084 .493	06.6	13.1	19.0	24.6	30.2	35.5	40.4	-	-	-	-	-	-	-	-	-	44.9	.0160	.0414
23	.083 .492	06.6	13.0	19.1	25.2	30.7	36.1	41.1	-	-	-	-	-	-	-	-	-	45.3	.0159	.0409
AVERAGE STRESS		06.7	13.1	19.2	25.0	30.4	36.7	40.5										45.0	.0159	
STANDARD DEVIATION STRESS		.30	.28	.76	.70	.77	.81	.97										1.86	.00069	
AVERAGE STRESS-3σ		5.8	1.25	1.69	22.9	28.1	33.3	37.6										39.4	.0138	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-12 REDUCED TEST DATA

PANEL NO.	T'YPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS					
S/N 14	TENSION	90°		95% RH @ 125°F FOR 42 DAYS				160°F FOR 10 MINS				35.6%				.0104				
STRAIN - IN./IN.				STRESS - KSI																
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
75	.082	.496	08.5	12.5	17.9	22.8	27.8	32.0	36.4	-								38.2	.0152	.0407
90	.084	.496	08.0	11.6	17.0	21.8	26.4	30.8	36.1	-								35.6	.0144	.0417
103	.082	.496	05.9	11.8	17.4	22.4	27.0	31.4	36.9	-								37.8	.0149	.0407
106	.083	.496	08.5	12.5	17.9	22.7	27.2	31.9	36.0	-								37.9	.0149	.0411
111	.083	.496	08.5	12.6	18.0	22.8	27.4	32.0	36.4	-								38.7	.0150	.0412
124	.025	.496	06.1	11.9	17.1	23.0	26.6	30.8	36.1	-								36.6	.0147	.0422
137	.082	.496	08.4	12.4	17.9	23.9	27.4	32.0	36.4	-								36.8	.0142	.0407
138	.082	.495	06.9	12.1	17.2	22.8	26.1	30.1	34.6	-								37.6	.0156	.0422
139	.084	.497	08.9	12.6	17.7	23.5	26.8	31.4	36.7	-								38.3	.0155	.0418
146	.084	.493	06.8	12.6	17.9	23.7	27.1	31.2	36.8									38.6	.0155	.0414
AVERAGE STRESS			6.4	12.3	17.6	23.0	27.0	31.4	36.3									37.6	.0150	
STANDARD DEVIATION STRESS			.38	.38	.39	.63	.51	.59	.66									.99	.00047	
AVERAGE STRESS-3σ			5.3	11.2	16.4	21.1	26.5	29.6	33.6									34.6	.0136	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-13 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.		NOMINAL PER PLY THICKNESS			
S/N 14	TENSION	0°	95% RH@ 125°F FOR 42 DAYS								220°F FOR 10 MIN				36%		.0102			
SPEC. NO.	STRAIN IN./IN.	STRESS - KSI															MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2	
	T ⁽¹⁾	W ⁽¹⁾	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030			
41	.085	.496	06.5	12.4	18.3	23.8	29.0	34.5	38.6									38.8	.0146	.0422
43	.069	.498	08.1	16.4	23.2	30.6	37.4	42.9										47.7	.0137	.0344
47	.085	.500	06.8	12.6	18.2	24.2	29.4	34.4	38.8									41.3	.0157	.0425
52	.087	.495	06.4	12.1	17.9	23.0	28.3	33.3										36.1	.0132	.0431
54	.084	.496	06.9	12.6	18.5	24.2	29.4	34.8										39.4	.0139	.0416

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AIII-14 REDUCED TEST DATA

[illegible]

FOOTNOTES (1) TO NEAREST .001"

A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

C) CURVE EXCEEDED THE GRAPH PAPER

D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(ii) CURVE IDEALIZED

TABLE - AIII-15 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT	NOMINAL PER PLY THICKNESS						
S/N 16; S/N 14	TENSION	0°	400°F FOR 100 HRS								400°F FOR 30 MIN				35.6%	.0104						
SPEC NO	STRAIN IN./IN.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
				002	004	006	008	010	012	014	016	018	020	022	024	026	028	030				
S/N 16 - 12		.082	.496	05.6	11.3	16.9	22.2	27.6	33.0	37.8									41.8	.0156	.0407	
14		.082	.496	05.6 (1)	11.8	17.2	22.6	28.0	33.2	38.4									40.2	.0146	.0407	
16		.082	.496	06.0	11.7	17.2	22.6	27.8	33.2	38.2									41.3	.0154	.0407	
18		.082	.497	05.9	11.8	17.2	22.6	28.0	33.1										36.6	.0133	.0408	
20		.082	.496	06.9	11.4	17.1	22.4	27.5	33.0										37.9	.0139	.0407	
46		.081	.496	08.2	12.2	17.9	23.4	28.9	34.4	39.4	44.2								45.0	.0184	.0402	
47		.082	.496	06.3	12.3	17.7	23.0	28.5	33.8										34.8	.0129	.0407	
51		.085	.496	06.9	11.9	17.8	23.1	28.4	33.8	38.6									39.2	.0143	.0421	
S/N 14 - 150		.084	.496	08.4	12.0	17.4	22.9	28.3	33.1										34.0	.0129	.0416	
157		.086	.496	06.9	11.3	16.5	22.0	27.3	32.0	36.8									41.0	.0160	.0421	
AVERAGE STRESS				5.0	11.8	17.3	22.7	28.0	33.3										39.2	.0146		
STANDARD DEVIATION STRESS				.27	.37	.43	.43	.47	.64										3.40	.00128		
AVERAGE STRESS-3σ				5.2	10.7	16.0	21.1	28.2	30.8										29.0	.0107		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-16 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 14	TENSION	90°	400°F FOR 100 HRS								400°F FOR 30 MIN				35.6%				.0103			
STRAIN IN./IN.		STRESS - KSI																				
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2		
76	.082	.495	04.4	06.4	14.3	19.4	24.0	28.3	32.7									34.4	.0145	.0408		
78	.082	.495	05.1	10.3	15.2	20.2	24.6	29.0										31.2	.0129	.0408		
81	.082	.495	05.4	10.3	15.2	19.0	24.1	28.6	33.0									33.5	.0141	.0408		
83	.082	.495	06.7	10.8	15.5	20.6	25.1	29.4										31.2	.0126	.0408		
114	.083	.495	04.8	09.8	14.7	19.5	24.0	28.3										32.8	.0140	.0410		
115	.083	.494	05.9	10.7	15.5	20.0	24.2	28.3										29.3	.0139	.0410		
116	.082	.495	06.7	10.4	15.4	20.2	24.6											29.3	.0120	.0408		
118	.082	.496	04.9	09.8	14.7	19.5	23.7	28.0										32.0	.0136	.0407		
121	.082	.495	04.4	09.4	14.1	18.7	23.2	27.6										31.0	.0137	.0408		
122	.082	.495	04.9	09.7	14.8	19.7	24.1	28.4										32.5	.0136	.0408		
AVERAGE STRESS			5.1	10.1	14.9	19.7	24.2	28.5										32.0	.0136			
STANDARD DEVIATION STRESS			.63	.51	.50	.54	.52	.57										1.44	.00076			
AVERAGE STRESS-3σ			3.2	8.6	13.4	18.1	22.6	26.8										27.7	.0112			

FOOTNOTES (1) "O NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-18 REDUCED TEST DATA

[illegible]

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOR METER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AIII-19 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N4,S/N6,S/N3	COMPRESSION	0°	1Hr @ -65°F				-65°F For 30 Min				35.6%				.0103				
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC NO.	T (1)	W (1)	STRESS - KSI																
S/N4 4	.081	.750	07.2	15.5	23.2	30.4	37.6	44.7	52.0	60.4	69.0	-	-	-	-	-	75.4	.0199	.0808
10	.080	.750	08.3	16.7	23.8	31.7	38.4	45.2	52.1	59.0	65.4	71.7	78.0	83.0	-	-	83.7	.0243	.0800
28	.081	.750	07.0	17.7	28.0	34.6	41.7	48.6	55.7	61.7	70.9	79.8	-	-	-	-	82.3	.0211	.0807
43	.082	.740	11.0	18.4	26.0	32.8	40.6	51.5	61.3	-	-	-	-	-	-	-	70.3	.0159	.0815
51	.081	.750	07.4	15.5	21.8	29.6	36.8	43.6	50.6	57.6	62.2	74.1	80.1	-	-	-	80.9	.0225	.0807
S/N6 211	.083	.740	10.1	17.6	25.9	32.2	39.6	46.3	53.1	59.5	65.9	-	-	-	-	-	67.6	.0185	.0821
212	.083	.750	08.1	10.4	20.8	28.1	34.5	41.3	48.1	54.5	60.1	65.2	70.0	-	-	-	73.7	.0237	.0824
213	.082	.740	07.7	14.7	21.7	28.5	35.4	41.9	48.4	54.7	61.2	66.8	72.0	-	-	-	73.6	.0226	.0814
214	.079	.740	09.7	19.6	26.2	33.8	40.5	47.3	54.3	60.9	66.8	-	-	-	-	-	71.4	.0195	.0802
S/N3 III	.082	.750	07.4	14.9	22.8	30.1	37.4	43.9	51.2	57.7	63.9	70.2	76.0	82.1	-	-	83.3	.0248	.0815
AVERAGE STRESS			8.2	16.0	24.2	31.2	38.5	45.4	52.7								76.2	.0213	
STANDARD DEVIATION STRESS			1.57	2.43	2.36	2.17	2.36	2.80	3.84								5.88	.00282	
AVERAGE STRESS ± 3σ			4.5	8.3	17.1	24.7	31.2	38.7	41.2								58.8	.0138	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(II) CURVE IDEALIZED

TABLE - AIII-20 REDUCED TEST 'DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-21 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N6	COMPRESSION	0°	125°F @ 95% RH for 42 Days				-65°F For 30 Min.				35.6%				.0038				
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²
SPEC NO.	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
169	.080	.750	08.5	17.5	25.8	35.0	43.3	52.0	60.0	67.5							71.4	.0170	.0800
172	.089	.748	11.6	22.5	33.3	43.2	51.2	56.1	-								64.0	.0136	.0516
176	.072	.750	09.3	19.6	29.4	41.6	55.5	65.5	-								66.5	.0120	.0540
178	.083	.750	08.4	18.1	25.8	33.7	41.1	48.6	57.8								64.7	.0154	.0623
180	.082	.750	09.6	18.7	27.3	38.2	44.9	53.2	59.0								65.3	.0157	.0615
189	.082	.750	08.1	17.4	26.0	34.2	41.7	49.6	57.0	64.3	-						70.5	.0167	.0815
217	.079	.751	10.6	20.3	29.6	38.0	46.5	54.6	62.1	69.4	75.0	-					77.3	.0186	.0593
218	.083	.749	09.8	18.5	26.6	35.2	43.4	51.0	59.0	66.3	-						68.8	.0166	.0621
229	.077	.751	07.8	15.4	22.8	34.7	42.5	50.3	57.6	65.0	72.3	-					73.2	.0197	.0578
230	.079	.749	08.3	16.2	25.2	33.4	40.8	48.3	54.9	59.8	64.0	-					66.2	.0190	.0542
AVERAGE STRESS			09.2	18.4	27.2	36.5	45.1	53.2									68.8	.0184	
STANDARD DEVIATION STRESS			1.02	2.05	2.91	4.06	4.42	5.38									4.36	.00233	
AVERAGE STRESS -3σ			6.1	12.3	18.5	24.4	31.8	37.4									55.7	.0086	

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-22 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING					TEST COND.					RESIN CONT.					NOMINAL PER PLY THICKNESS				
S/N6	COMPRESSION	90°			95% RH @ 125°F For 42 Days					-85°F For 30 Min					35.6%					.0093				
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS			STRAIN AT MAX STRESS		AREA IN. ²		
SPEC. NO.	T ⁽¹⁾	STRESS - KSI																						
180	.064	.750	(1)	08.9	18.3	28.2	37.8	46.5	55.2	—							56.3	.0122	.0480					
194	.078	.750		09.4	19.7	29.1	38.2	47.0	55.0	—							60.4	.0133	.0585					
196	.079	.749		08.5	16.9	23.7	31.6	39.8	47.1	53.3	—						57.1	.0158	.0592					
200	.070	.750	(1)	07.4	15.0	22.4	30.4	—									37.1	.0098	.0440					
201	.069	.749		08.1	15.7	24.4	(1) 32.1	(1) 39.7	(1) 47.4								51.0	.0134	.0516					
202	.072	.749		09.3	18.4	26.7	34.8	42.0	48.3	—							49.9	.0125	.0539					
232	.083	.751		10.9	18.8	26.4	33.7	40.3	47.4	52.1	—						53.3	.0143	.0823					
233	.064	.750		07.8	15.3	23.0	30.3	37.8	45.4	52.0	57.3	—					58.1	.0161	.0630					
235	.084	.751	(1)	06.5	12.8	18.8	(1) 25.2	30.8	36.9	41.9	48.0	52.1	—				54.3	.0191	.0630					
237	.084	.751		05.2	12.0	25.3	18.5	21.9	25.2	28.6	31.8	35.3	38.5	41.8	44.5	47.5	50.3	51.8	.0292	.0630				
AVERAGE STRESS		87	16.3	23.8	31.1												52.9	.0158						
STANDARD DEVIATION STRESS		1.61	2.59	4.25	6.19												6.32	.00572						
AVERAGE STRESS-3σ		3.4	8.5	11.0	12.4														.0014					

FOOTNOTES

(1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AIII-24 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AIII-25 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION		SPEC. CONDITIONING				TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS				
S/N 6	COMPRESSION	0°		95% RH @ 125°F FOR 42 DAYS				RT				35.6%				.0093				
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS		STRAIN AT MAX STRESS	AREA IN. ²
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
167	.079	.749	(1) 07.7	15.1	23.3	29.8	37.1	45.5	50.5	-								56.9	.0157	.0598
170	.089	.751	(1) 08.7	17.2	26.7	(1) 34.6	43.0	51.8	-									53.3	.0122	.0626
173	.071	.750	08.5	16.7	25.0	32.5	42.5	50.2	57.4	-								59.0	.0149	.0633
181	.081	.750	08.3	11.2	15.1	19.6	23.0	27.3	34.6	40.0	47.0	53.5	-					53.5	.0120	.0607
182	.081	.750	08.1	17.7	29.0	39.6	46.5	-										53.5	.0120	.0607
183	.072	.746	09.3	18.0	26.7	34.4	41.9	47.5	51.1	53.3								57.6	.0098	.0540
184	.072	.750	11.7	17.5	27.2	37.0	46.6	54.6										54.8	.0121	.0540
185	.071	.751	08.5	17.4	26.8	36.6	45.9	53.2										55.0	.0123	.0533
186	.070	.750	09.3	19.0	27.6	36.7	43.0	51.0	-									52.4	.0123	.0626
188	.078	.750	08.9	16.7	26.3	32.9	40.5	47.0	-									51.5	.0129	.0593
AVERAGE STRESS			8.8	17.6	26.2	33.3	41.0											55.1	.0136	
STANDARD DEVIATION STRESS			1.38	2.29	40.2	5.31	6.96											2.63	.00323	
AVERAGE STRESS±3σ			9.4	10.4	14.1	17.4	20.1											47.2	.0039	

FOOTNOTES: (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
- (C) CURVE EXCEEDED THE GRAPH PAPER
- (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
- (I) CURVE IDEALIZED

TABLE - AIII-26 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION								SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
S/N 6	COMPRESSION	90°								95% RH @ 125°F FOR 42 DAYS								RT				35.6%				.0089																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	STRESS - KSI								MAX STRESS				STRAIN AT MAX STRESS				AREA IN. 2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
191	.075	.748	07.1	18.3	28.1	33.5	38.3	40.4	42.4	-																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</

FOOTNOTES

(1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(E) CURVE IDEALIZED

TABLE - AIII-27 REDUCED TEST DATA

PANEL NO	TYPE TEST		TEST DIRECTION				SPEC. CONDITIONING								TEST COND				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 4	COMPRESSION		0°				NONE								180° FGR 30 MIN				35.6%				.0102			
STRAIN IN / IN			002	004	006	008	010	012	014	016	018	020	022	024	026	028	030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2						
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																							
5	.081	.751	.773	14.3	20.7	27.6	33.7	38.4	40.4	42.3	44.0	46.0	47.8	49.6	51.5	53.5	55.2	57.6	.0316	.0609						
14	.081	.751	.090	15.3	22.7	30.8	33.5	46.2	53.4	-	-	-	-	-	-	-	-	55.4	.0146	.0609						
31	.080	.751	.083	15.5	22.4	30.6	37.6	43.0	46.0	48.3	51.1	53.5	54.9	56.9	58.9	-	-	60.9	.0273	.0601						
32	.080	.751	.060	11.5	19.9	26.6	31.1	36.0	40.9	-	-	-	-	-	-	-	-	47.6	.0156	.0601						
40	.082	.751	.071	14.6	21.5	29.2	37.0	42.8	48.8	54.0	-	-	-	-	-	-	-	56.0	.0168	.0616						
42	.082	.750	.088	15.1	22.0	29.1	36.1	42.6	49.0	54.5	-	-	-	-	-	-	-	58.7	.0178	.0615						
46	.082	.750	.075	14.5	21.3	27.8	34.2	40.5	-	-	-	-	-	-	-	-	-	46.8	.0136	.0615						
59	.084	.751	.067	11.9	18.2	25.4	32.2	38.0	41.8	48.5	-	-	-	-	-	-	-	49.4	.0163	.0631						
60	.083	.750	.049	10.6	17.1	23.7	30.0	36.2	46.8	-	-	-	-	-	-	-	-	51.3	.0178	.0621						
65	.081	.751	.089	15.8	22.5	29.6	36.6	43.4	49.3	41.5	46.8	-	-	-	-	-	-	63.0	.0186	.0609						
AVERAGE STRESS			07.4	13.9	20.9	28.0	34.1	40.7										54.7	.0190							
STANDARD DEVIATION STRESS			1.37	1.89	1.89	2.26	2.60	3.41										6.49	.00576							
AVERAGE STRESS-3σ			2.7	8.2	15.2	21.2	25.7	30.5										38.3	.0018							

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-28 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION			SPEC. CONDITIONING				TEST COND.				RESIN CONT.			NOMINAL PER PLY THICKNESS		
S/N6, S/N4, S/N3	COMPRESSION	90°			NONE				160°F FOR 30 MIN				35.6%			.0103		
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030		
SPEC. NO.	T (1)	W (1)	STRESS - KSI															
S/N 6 - 234	.083	.749	06.8	12.2	17.9	23.4	29.0	33.3	-								34.7	.0127
S/N 4 - I	.080	.751	07.0	13.3	19.0	24.4	30.0	35.0	-								35.8	.0122
IV	.083	.750	06.0	12.6	18.4	28.0	35.4	-									37.8	.0110
V	.082	.751	05.8	11.3	16.4	22.1	28.6	35.0	-								36.5	.0134
IX	.081	.751	05.9	12.7	17.8	25.5	34.5	37.8	-								39.4	.0140
X	.083	.751	06.9	16.0	22.0	27.3	31.6	37.4	-								38.4	.0122
XII	.083	.750	06.2	10.0	14.5	20.2	25.9	30.4	-								35.0	.0136
S/N 3 - 34	.084	.753	05.7	10.9	16.1	22.0	27.6	32.2	-								36.0	.0132
43	.083	.749	05.8	10.9	16.4	23.2	29.5	36.2	-								37.4	.0131
53	.083	.752	05.3	10.1	14.9	20.2	26.6	34.6	-								38.1	.0136
AVERAGE STRESS			05.9	12.0	17.3	23.6	30.0										36.9	.0129
STANDARD DEVIATION STRESS			1.26	1.80	2.10	2.69	3.15										1.47	.00089
AVERAGE STRESS-3σ			2.1	6.6	11.0	15.5	25.5										32.5	.0102

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AIII-29 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.		NOMINAL PER PLY THICKNESS			
S/N 4, S/N 6	COMPRESSION	0°	95% RH @ 125°F FOR 42 DAYS								160°F FOR 10 MIN				35.6%		.0101			
STRAIN - IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2	
SPEC. NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																	
S/N 4 - 13	.081	.752	08.6	15.3	22.0	28.6	34.8	41.3	42.3	-							49.5	.0147	.0609	
33	.081	.751	08.2	14.8	21.4	27.9	34.5	41.4	49.4	-							54.9	.0155	.0609	
57	.084	.750	07.2	13.5	19.9	26.6	33.3	39.9	-								42.4	.0138	.0630	
62	.081	.752	06.4	12.8	19.3	26.3	32.9	39.0	44.9	-							47.6	.0149	.0609	
75	.083	.751	06.9	16.4	26.5	34.4	40.9	47.3	52.6								53.3	.0146	.0624	
S/N 6 - 189	.081	.750	06.2 ⁽¹⁾	12.0	18.2	24.6	32.0	38.8	-								41.5	.0131	.0607	
210	.073	.749	06.9	13.8	20.8	28.2	35.5	42.7	-								48.6	.0140	.0546	
215	.079	.750	05.9	12.2	19.0	28.7	37.5	-									40.8	.0107	.0593	
220	.085	.750	11.7	22.6	32.9	-											37.6	.0075	.0638	
226	.080	.752	06.2	14.3	20.8	27.9	34.9	40.9									43.6	.0128	.0601	
AVERAGE STRESS			7.4	14.8	22.1												46.0	.0132		
STANDARD DEVIATION STRESS			1.71	3.08	4.44												5.66	.00241		
AVERAGE STRESS-3σ			2.3	5.6	8.8												29.0	.0060		

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

TABLE - AI-1-30 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.				RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 3, S/N 6	COMPRESSION	90°	85% RH @ 125°F FOR 42 DAYS								160°F FOR 30 MIN				35.6%				.0102			
STRAIN IN./IN.		.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030						
SPEC NO.	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																			
S/N 3 - 8	.084	.751	.062	10.3	16.6	22.2	27.8	31.8	36.2	-							36.9	.0141	.0631			
21	.084	.749	.056	11.6	17.4	23.1	28.5	33.9	-								35.2	.0136	.0628			
37	.084	.749	.067	12.8	19.4	25.8	31.8	-									38.2	.0118	.0629			
52	.084	.752	.054	11.1	16.5	22.2	28.5	33.3	-								36.6	.0134	.0631			
66	.083	.751	.056	11.1	16.0	21.8	27.2	32.7	-								35.4	.0130	.0624			
S/N 6 - 192	.080	.750	.050	09.8	15.9	20.7	24.5	29.8	35.4	-							36.0	.0142	.0600			
198	.071	.749	.066	12.7	18.8	-											23.7	.0073	.0533			
231	.080	.750	.057	12.2	16.3	20.2	24.5	30.0	34.6	-							37.7	.0154	.0600			
238	.084	.750	.098	19.1	A												35.1	A	.0630			
243	.083	.750	.056	11.4	16.4	20.9	23.5	28.0	30.7	A							37.9	A	.0622			
AVERAGE STRESS			6.22	12.2	19.1												35.27	.0127				
STANDARD DEVIATION STRESS			1.22	1.68	2.86												3.3	.0024				
AVERAGE STRESS-3σ			2.56	7.2	10.5												25.4	.0054				

FOOTNOTES (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED

TABLE - AIII-32 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOR AFTER SLIPPAGE

(1) CURVE IDEALIZED

TABLE · AIII-33 REDUCED TEST · ATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS															
S/N4,S/N6,S/N14	COMPRESSION	0°	100 Hrs @ 400° F	400° F For 30 Min	35.6%																
SPEC. NO.	T (1)	W (1)	STRESS - KSI																		
S/N 4	1	.081	.749	.002	.004	.006	.008	.010	.012	.014	.016	.018	.020	.022	.024	.026	.028	.030	MAX STRESS	STRAIN AT MAX STRESS	AREA IN.²
				06.6	12.6	18.2	22.8	29.6	—										31.1	.0103	.0606
	15	.080	.750	07.1	14.2	20.4	26.8	32.8	39.2	—									42.0	.0132 ⁽¹⁾	.0600
	55	.080	.751	06.5	14.2	22.3	30.4	—											36.7	.0098	.0601
	71	.079	.750	05.3	11.1	17.8	23.8	29.7	36.1	—									36.4	.0121	.0593
	74	.079	.751	06.1	12.2	18.4	24.2	30.0	36.9	41.3	—								41.4	.0142	.0594
S/N 6	216	.079	.749	05.3	10.5	15.8	21.2	—											23.1	.0086	.0590
	223	.075	.751	06.1	11.9	17.8	23.5	—											24.5	.0085	.0595
	224	.079	.751	06.1	11.9	17.7	—												21.6	.0072	.0595
	236	.078	.751	04.2	09.4	14.3	19.4	—											20.5	.0084	.0586
S/N 14	5	.085	.746	06.9	13.7	20.5	28.2	—											33.2	.0096	.0635
AVERAGE STRESS				6.4	12.2	18.3													31.0	.0102	
STANDARD DEVIATION STRESS				.96	1.58	2.21													8.03	.00228	
AVERAGE STRESS-3σ				3.5	7.5	11.7													7.8	.0034	

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AIII-34 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.	RESIN CONT.	NOMINAL PER PLY THICKNESS			
S/N 3, S/N 14	COMPRESSION	90°	100 Hrs @ 400°F								400°F For 30 Min	36.6%				
STRAIN IN/IN		002	004	006	008	010	012	014	016	018	020	022	024	026	028	030
SPEC NO	T(1) W(1)	STRESS - KSI														
S/N 3 17	.083 .752	06.3	10.1	14.5	—	—	—	—	—	—	—	—	—	—	—	18.2
36	.077 .749	06.4	10.7	16.3	22.5	28.7	—	—	—	—	—	—	—	—	—	31.0
50	.079 .751	04.9	10.0	15.1	20.0	26.1	—	—	—	—	—	—	—	—	—	25.3
73	.083 .751	06.9	11.1	16.3	20.7	—	—	—	—	—	—	—	—	—	—	22.8
14	.083 .750	06.3	13.3	19.8	—	—	—	—	—	—	—	—	—	—	—	22.2
25	.083 .750	06.0	10.5	15.8	20.7	—	—	—	—	—	—	—	—	—	—	23.2
42	.082 .749	08.3	14.4	20.2	—	—	—	—	—	—	—	—	—	—	—	23.1
44	.083 .750	06.9	10.9	17.8	22.8	—	—	—	—	—	—	—	—	—	—	23.9
64	.081 .750	04.7	09.4	14.1	19.2	—	—	—	—	—	—	—	—	—	—	23.4
S/N 14 8	.084 .747	04.1	09.2	15.3	21.9	28.3	—	—	—	—	—	—	—	—	—	29.4
AVERAGE STRESS		06.7	12.0	16.5												23.2
STANDARD DEVIATION STRESS		17.1	19.9	20.9												3.26
AVERAGE STRESS-3σ		2.1	6.0	10.2												13.4

FOOTNOTES (1) TO NEAREST .001"

- (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
- (C) CURVE EXCEEDED THE GRAPH PAPER
- (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
- (I) CURVE IDEALIZED

TABLE - AIII-36 REDUCED TEST DATA

[illegible]

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

TABLE - AIIF-37 REDUCED TEST DATA

PANEL NO.	TYPE TEST	TEST DIRECTION				SPEC. CONDITIONING				TEST COND.				F ₁ SIN CONT				NOMINAL PER PLY THICKNESS			
S/N 16, S/N 17	PANEL SHEAR	0/90				NONE				-65° F FOR 30 MIN				36.6%							
STRAIN IN./IN		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. ²		
SPEC NO	T ₁ (1) W(1)	STRESS - KSI																			
S/N 16 - 5	.084 3.875	06.5	11.7	16.9	18.5	18.8	19.2	19.4	19.6	19.7	19.8	19.8					19.8	.0666	.318		
6	.080 3.875	06.2	11.1	14.3	16.4	17.7	18.5	19.0	19.3	19.5	19.9	20.0	20.2	20.4			20.6	.0636	.310		
10	.080 3.875	06.2	08.4	12.1	14.2	15.6	16.5	17.3	17.8	18.1	18.3	18.5	18.6	18.6	18.6	18.6	18.8	.0672	.310		
11	.080 3.875	05.5	08.5	12.5	14.6	16.4	17.4	18.2	18.5	18.7	18.9	18.9	18.9	19.0			19.1	.0660	.310		
13	.081 3.875	07.0	11.3	14.6	16.3	17.6	18.4	18.9	19.2	19.5	19.6	19.7					19.8	.0480	.314		
14	.079 3.875	04.6	09.3	12.7	15.0	16.2	17.2	17.9	18.2	18.5	18.8	19.0	19.2				19.3	.0616	.306		
15	.077 3.875	06.4	10.9	14.1	16.3	17.7	18.7	19.6	20.2	20.5	21.0	21.2	21.5				21.6	.0486	.298		
16	.078 3.875	07.0	12.6	15.5	17.5	18.7	19.4	19.9	20.0	20.0	20.0	20.1					20.1	.0464	.302		
S/N 17 - 4	.084 3.875	06.8	11.6	14.6	16.0	17.1	17.4	17.5	17.5	17.5	17.7	17.9	18.0				18.0	.0616	.326		
7	.081 3.875	06.2	11.3	14.4	16.0	17.2	17.9	18.3	18.5	18.5	18.5	18.5	18.5	18.5			18.6	.0660	.314		
AVERAGE APPARENT STRESS		08.1	10.9	14.2	16.1	17.3	18.1	18.6	18.8	19.1	19.3	19.4					19.6	.0614			
STANDARD DEVIATION APPARENT STRESS		.65	1.11	1.42	1.28	1.03	.91	.96	.96	.98	.98	.92					1.06	.00315			
AVERAGE APPARENT STRESS - 3σ		4.1	7.6	10.9	12.3	14.2	15.4	15.7	15.9	16.1	16.3	16.6					16.4	.0326			
*(.98) x (AVERAGE APPARENT STRESS)		5.4	9.8	12.5	14.2	15.2	15.9	16.4	16.5	16.5	17.6	17.1					17.2				
*(.98) x (AVERAGE APPARENT STRESS - 3σ)		3.6	6.7	9.6	10.8	12.5	13.5	13.8	13.9	14.2	14.3	14.6					14.4				

FOOTNOTES (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED
 * THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE · AIII-38 REDUCED TEST DATA

[illegible]

FOOTNOTES

(1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(ID) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM
AVERAGES BECAUSE OF COMPRESSOMETER SLIPAGE

(II) CURVE IDEALIZED

• THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AIII-39 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING								TEST COND.	RESIN CONT.				NOMINAL PER PLY THICKNESS			
S/N 6 - S/N 13	PANEL SHEAR	0/90	-								RT				36.6%				
STRAIN IN./IN		.004	.008	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MAX STRESS	STRAIN AT MAX STRESS	AREA IN. 2
SPEC NO	T ⁽¹⁾ W ⁽¹⁾	STRESS - KSI																	
S/N 6 - 32	.082 3.875	05.8	09.8	11.8	12.8												13.8	A	0.318
39	.079 3.875	05.8	10.0	12.4													14.4	A	0.306
40	.083 3.875	05.3	09.2	11.5	13.1												14.0	A	0.372
S/N 16 - 1	.080 3.875	05.4	09.1	11.4	12.6	13.5	14.0	14.3	14.4	14.7	14.8	15.0	15.0				15.1	.0620	0.310
4	.080 3.875	05.5	09.4	12.2	14.4	14.9	15.3										15.4	.0246	0.310
8	.080 3.875	05.4	09.4	12.0	13.3	14.2	14.8	15.1	15.5	15.8	16.0						16.0	.0436	0.310
12	.082 3.875	05.0	08.8	11.3	12.4	13.7	14.2	14.6	14.9	15.0							15.3	.0400	0.318
9	.080 3.875	05.4	09.5	11.8	12.9	13.8	14.3	14.7	15.0	15.2	15.3	15.3	15.3	15.4	15.5		15.6	.0592	0.310
2	.081 3.875	04.9	08.8	11.2	12.5	13.3	14.0	14.4	14.8	14.8	15.1						15.3	.0438	0.314
17	.083 3.875	04.4	08.7	11.2	12.7	13.5	14.1	14.3	14.5	14.7	14.7	14.8					14.8	.0462	0.322
AVERAGE APPARENT STRESS		5.3	9.3	11.7	13.0												15.0	.0370	
STANDARD DEVIATION APPARENT STRESS		.4	.4	.4	.7												.7	.0072	
AVERAGE APPARENT STRESS - 3σ		4.0	8.0	10.5	11.5												12.8		
*(.080) x (AVERAGE APPARENT STRESS)		4.7	8.2	10.3	11.4												13.2		
*(.080) x (AVERAGE APPARENT STRESS - 3σ)		3.5	7.0	9.2	9.7												11.2		

FOOTNOTES: (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AIII-40 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC. CONDITIONING	TEST COND.	RESIN CONT	NOMINAL PER PLY THICKNESS													
S/N 6	PANEL SHEAR	0/90	NONE	180° F FOR 30 MIN.	35.6%														
STRAIN IN./IN		.004	.006	.012	.016	.020	.024	.028	.032	.036	.040	.044	.048	.052	.056	.060	MA' STRESS	STRAIN AT MAX STRESS	AREA IN 2
SPEC NO	T ⁽¹⁾	W ⁽¹⁾	STRESS - KSI																
S/N 6 - 14	.073	3.875	04.5	07.3	08.2	10.5	11.1	11.5									12.6	.0222	.283
20	.071	3.875	05.0	08.8	11.4												12.8	.0150	.291
26	.084	3.875	04.4	07.8	10.2	11.7	12.8										13.3	.0226	.325
34	.081	3.875	04.9	07.7	09.3	10.5	11.0	11.4									11.7	.0270	.314
30	.082	3.875	04.4	08.4	10.0	11.3	12.2										12.8	.0234	.318
37	.075	3.875	04.1	06.7	08.5	09.7	10.6	11.4	11.9	12.0	12.2						13.0	.0674	.291
42	.077	3.875	04.6	07.6	09.7	11.1	11.9	12.5	12.8								13.1	.0294	.298
24	.078	3.875	04.8	07.9	09.7	10.8											13.1	.0460	.302
27	.084	3.875	04.4	07.6	10.0	11.5	12.6										12.8	.0204	.326
33	.081	3.875	04.7	07.4	09.1	10.1	10.8										11.4	.0270	.314
AVERAGE APPARENT STRESS			4.6	7.7	9.7												12.7	.03126	
STANDARD DEVIATION APPARENT STRESS			.3	.6	.9												.62		
AVERAGE APPARENT STRESS - 3σ			3.8	6.0	7.1												10.8		
*(.88) x (AVERAGE APPARENT STRESS)			4.0	8.8	8.8														
*(.88) x (AVERAGE APPARENT STRESS - 3σ)			3.5	5.3	6.2														

FOOTNOTES (1) TO NEAREST .001"

(A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(I) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE - AIII-41 REDUCED TEST DATA

PANEL NO	TYPE TEST	TEST DIRECTION	SPEC CONDITIONING	TEST COND	RESIN CONT	NOMINAL PER PLY THICKNESS
S/N 6	PANEL SHEAR	0/90°	100 HRS AT 400° F	400° F FOR 30 MIN.	35.6%	
STRAIN IN / IN						
SPEC NO	T (1) W (1)	.004 .008 .012 .016 .020 .024 .028 .032 .036 .040 .044 .048 .052 .056 .060	STRESS - KSI			
S/N 6 - 22	.081 3.875	(1) .010 .018 .025 .031 .038 .040 .043 .045 .048 A				.058 A .314
36	.078 3.875	.009 .017 .023 .029 .034 .038 .041 .044 .047 .050 A				.059 A .302
21	.078 3.875	(1) .010 .019 .026 .032 .037 .042 .045 .048 .050 .051 A				.055 A .302
26	.081 3.875	(1) .011 .018 .027 .034 .038 .041 .042 .042 A				.054 A .314
AVERAGE APPARENT STRESS						
STANDARD DEVIATION APPARENT STRESS						
AVERAGE APPARENT STRESS - 30°						
* (.88) x (AVERAGE APPARENT STRESS)						
* (.88) x (AVERAGE APPARENT STRESS - 30°)						

FOOTNOTES (1) TO NEAREST .001"
 (A) COMPRESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED
 (C) CURVE EXCEEDED THE GRAPH PAPER
 (D) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE
 (I) CURVE IDEALIZED
 * THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

TABLE · AIII-42 REDUCED TEST DATA

[illegible]

FOOTNOTES

(U) TOP SECRET 001"

(A) CO...ESSOMETER WAS SHUT OFF BEFORE FAILURE OCCURRED

(C) CURVE EXCEEDED THE GRAPH PAPER

(ID) STRESS REPORTED FOR RECORDING PURPOSES BUT DELETED FROM AVERAGES BECAUSE OF COMPRESSOMETER SLIPPAGE

(1) CURVE IDEALIZED

* THERE WAS AN ASSUMED FRICTION OF 12% IN PINS

[illegible]

MATERIAL IDENTIFICATION:

STRAIN GAGE FACTOR: 2.03
STRAIN GAGE RESISTANCE: 120Ω
EXTENSOMETER: S-400-2AE

FILA. ORIENT.

RESIN CONT.

PANEL

00

35.6%

S/N18

[illegible]

